

JPRS 76180

7 August 1980

China Report

AGRICULTURE

No. 94



FOREIGN BROADCAST INFORMATION SERVICE

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AGRICULTURAL SCIENCES

ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA],	
No 2, May 80	65

I. GENERAL INFORMATION

XIANG YANG URGES PROMOTION OF AGRICULTURAL TECHNOLOGY

Beijing GUANGMING RIBAO in Chinese 9 Jun 80 p 2

[Article by Xiang Yang [0686 7122], State Scientific and Technological Commission: "Great Exploitable Potential For Promotion of Achievements in Agricultural Technology"]

[Text] Not long ago, the Achievements Management Office of the State Scientific and Technological Commission convened an agricultural science and technology achievements exchange conference attended by 29 provinces, municipalities, and autonomous regions from north and south China. It is apparent from a look at the more than 400 accomplishments in agricultural science and technology exchanged at the conference that a great amount of exploitable potential exists for the promotion of achievements in agricultural science and technology.

First of all, judging from statements on accomplishments in the study of consistently high fields from grain crops, a great potential exists for increased output of grain in our country. Beginning in 1974, Henan Province organized more than 200 units throughout the province, more than 2700 technicians from more than 10 disciplines, and 475 basic point brigades who, after 5 years of cooperative efforts, mastered the laws of the growth and development during three stages of growth of the four principal varieties of wheat grown in Henan. They also set five technical and economic criteria for irrigation, fertilizer applications, and production costs; attended carefully to key techniques for growing wheat under five different water, fertility, and soil conditions; and also had the benefit of 11 comprehensive accomplishments in scientific research. Following widespread extension of these accomplishments throughout the basic point brigades, remarkable results were obtained in increased production. One example was 22 brigades in areas of customarily high yields where the average per mu yields for the past 5 years have increased from 800 jin to almost 1,000 jin. Other examples were 34 brigades in areas of customarily intermediate yields where the average per mu yields rose from 477 jin to 698 jin, and low yield areas where average per mu yields for 46 brigades rose from 286 jin to 461 jin. Were every place in the country able to concentrate their efforts intensely on the dominant crops in their local areas to make the most of the superiority that great socialist cooperation affords, the potential for increased output would be correspondingly sizeable.

Second was that numerous accomplishments illustrate that prospects for multiple operations are extremely vast. The successful testing of the new technology of blow-type airflow finishing of fancy planed board by the Fujian provincial forestry industry's Prospecting and Design Institute, in cooperation with the Fuzhou Lumber Plant, resulted in a doubling of the amount of profit sent to higher echelons as compared with either the manual or even the mechanized finishing of the past. The Horticultural Institute of the Shanghai Municipal Academy of Agriculture and the Maolu Commune of Jiading County in Shanghai were successful in the use of wood shavings to take the place of logs for the culturing of mushrooms. Not only did this make possible the saving of a large amount of timber, but the production cycle was shortened; the mushrooms sprouted more quickly; and output was high.

Furthermore, numerous provinces, municipalities, and autonomous regions have achieved encouraging results with research on basic agricultural theory, and the application of these results to production has produced many benefits. The sugarcane research laboratory of Liucheng County in Guangxi selectively bred blastular groups of cell bodies with stable characteristics, that divided profusely, had high reproductive capacity, and were able to be grown for generation after generation. The sugarcane seedlings grown from them were similar in both the number of canes produced and the quantity of sugar to the common sugarcane, and their root systems gave perennial growth. In 1979, they were fields planted in 65 mu of open fields. The Sugarcane and Hemp Institute of the Fujian Provincial Academy of Agricultural Science had a survival rate of 90 percent on seedlings transplanted outside the laboratory that had been grown from sugarcane stalk and leaf tissue. Planted on 7 mu of fields in 1979, per mu yields were more than 7 tons. The Heilongjiang Provincial Keshan Institute of Agriculture separated and grew tissue from the end of a stalk under germ-free conditions, which it followed with intensive propagation to derive disease-free potatoes. The Keshan Institute of Agriculture also produced potato virus antiserum freeze dried powder, which effectively differentiates potato viruses so that timely preventive measures may be taken. This accomplishment has been spread through numerous provinces.

Many of the scientists and technicians at the conference felt that our country has had numerous accomplishments in agriculture, but that problems exist in intermediate experiments for the spread of these accomplishments, that there were too few demonstration areas for their spread, and that in some places there was no one to organize this activity. As a result, numerous achievements cannot be translated into productivity for a long period of time. They also pointed out that in numerous places the management system for scientific and technical accomplishments in agriculture were inadequate as were policies pertaining to promotional work. It is hoped that government departments concerned take effective measures to solve the aforesaid problems so that more technical achievements in agriculture will be quickly transformed directly into productivity.

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NATIONAL

PROSPECT FOR CONTROLLING SALINITY ON PLAINS

Beijing RENMIN RIBAO in Chinese 27 May 80 p 2

[Article by NEW CHINA NEWS AGENCY Reporter Guo Yongwen {6753 3057 2429}, abridged report: "Prospect for Controlling Salinity in the Plains of the Yellow River, Huai River and Hai River is Good"; Interview with expert in the control of salinity Wang Shouchun]

[Text] By propagating the techniques of controlling salinity which we have already mastered according to the local conditions, the production of food grains on the 50 million mu of saline soils of the plains of the Yellow River, Huai River and Hai River can be increased by 20 to 30 billion jin within 3 to 5 years!

This is the future view of the plains of the Yellow River, Huai River and Hai River after controlling salinity presented to us by the expert on the control of salinity, Wang Shouchun [3769 1343 4783] during an interview with this reporter.

The plains of the Yellow River, Huai River and Yellow River of our nation is a huge saline region of 50 million mu. The land is flat, the soil layers are deep and thick, the frostless period is long, there is more rain, transportation is convenient. These are superior conditions for developing modernized agriculture. Yet, because of salinization of the soil, agriculture here has lagged behind for a long time. Per mu yield of food grains is only 100 or 200 jin. Large pieces of land are wasted. To change the center of salinity into a rich food grain producing area has been the dream of the people of the saline regions of the plains of the Yellow River, Huai River and Hai River for thousands and hundreds of years. In the old society, this wonderful dream would never have been realized. Year after year the people were faced with reduced yields, empty harvests and escape from devastation. What is the situation now? Comrade Wang Shouchun told this reporter: We have already developed an effective method to control saline land on a large scale. There is great hope of changing the 50 million mu of saline land of the plains of the Yellow River, Huai River and Hai River into a rich food grain producing region.

Comrade Wang Shouchun has spent over 30 years studying ways to improve saline soils. He spent long periods working in the field, traveling, studying in Hebei, Shandong and Henan provinces. His hair has turned gray from such hard work. In retrospect, he says, after Liberation, our nation has exerted much efforts in controlling saline regions and achievements have been great. But, over a very long period of time the relationship among drought, floods and salinity was not fully understood and some inappropriate measures were taken. These measures could not change the salinity completely but sometimes the soil of some regions became more salinized. In recent years, scientific and technical personnel repeatedly explored ways through summarizing the experience and past lessons and finally grasped the pattern of movement of water and salt, and began to utilize a combination of many engineering projects in the field to decrease the salinity and also agricultural measures on a large scale. The movement of water and salt was regulated. Drought, waterlogging and salinity were comprehensively controlled and a rational ecological system in the farmland was established so that saline beaches could more quickly become good fields. For example, the Pedology and Fertilizer Institute of the Chinese Academy of Agricultural Sciences cooperated with brother units to engage in the control of saline land on a large scale in Yucheng County and Lingxian County in Shandong. The results were remarkable. The work has opened a new path for the control of salinity in the Yellow River, Huai River and Hai River plains. The problem now is to intensify the propagation of the techniques of controlling salinity. As long as we combine the characteristics of the various types of saline soils, utilize the already existing comprehensive control techniques, the task of turning the 50 million mu of plains of the Yellow River, Huai River and Hai River into a rich food grain producing area completely within a short period is entirely possible. Representatives from some nations saw the experimental saline control regions in Yucheng and Lingxian and praised the work. Some immediately invited our nation's specialists to go to their countries to help implement the techniques of controlling salinity applied here. In November of last year, the head of the department of agricultural engineering of the University of Hawaii in the United States, Chinese American Professor Wang Zaokai [3769 0340 0418] accompanied by Wang Shouchun compared the experimental saline control regions of Yucheng County and Lingxian County and the neighboring wasteland which was not subjected to saline control. The results of saline control of the two regions were surprising. He said to Wang Shouchun that he had seen many experimental regions controlling salinity in many nations but such a large area of over 100,000 mu in China is very rarely seen. He analyzed the relevant data and computed on his calculator right there and said, if the techniques of controlling salinity are implemented well and the 50 million mu of the plains of the Yellow River, Huai River and Hai River is changed into a region like the two experimental regions in Yucheng County and Lingxian County, the investment will not be large, and after several years, an increase in food grain production of several tens of billion of jin can be produced and all the investments can be retrieved. If improvements in the salinization of the plains of the Yellow River, Huai River and Hai River are delayed, a lot of natural energy sources will have to be spent and more foreign exchange will have to be spent to buy foodstuffs from abroad.

Wang Shouchun noted that propagating the scientific research results of controlling salinity already achieved requires the state to adjust the annual agricultural investment and appropriately increase the proportion of agricultural investment in the saline regions. This means 20 to 30 billion jin of food grains is within reach and it is truly one investment resulting in 10,000 gains'

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MEAT PRODUCTION STRESSED IN LIVESTOCK RAISING

Beijing GUANGMING RIBAO in Chinese 7 Jun 80 p 4

[Article by Yu Guoyao [0151 0948 5069]: "Livestock Industry Should Concentrate on Amount of Meat Produced"]

[Text] The ultimate goal of the livestock industry is to obtain livestock products in good quantity and of fine quality. For a long time in our livestock work we have "looked only at the number of animals on the hoof without asking about meat production." Production quotas stipulate only numbers of livestock without any requirements for slaughter rate, amount of meat produced, commodity rate, or any other qualities in livestock products. This has spawned an extremely erroneous notion, namely that the greater the number of cattle on the hoof, the bigger the achievement. As to just what the goal of the development of livestock is, remains unclear. As a result economic benefits are poor. According to statistics, our country's 300 million head of slaughter hogs are half of the total number in the world, but the amount of pork produced from them amount to only 15 percent of the world's supply. In 1977, world per capita consumption of meat was 47 jin, of milk 200 jin, and of eggs 12 jin, while for the same period in China, average per capita consumption of meat was 13 jin (95th in the world), of milk 2.2 jin, and of eggs 4.4 jin. Though some increase has occurred during the past 2 years, with per capital meat consumption last year in China amounting to 22 jin, this is only half the world average. This is far from being commensurate with the needs of the broad masses of people and from the requirements for the four modernizations.

The attitude of "looking only at the number of animals on the hoof without asking about meat production" has produced numerous irrational phenomena in our country's livestock industry. The feeding period for our livestock is long, and the slaughter rate low. Currently, the slaughter rate in countries of the world where livestock raising is advanced is generally better than 120 percent, and in the United States it is 150 percent, with each hog producing about 150 jin of meat. The slaughter rate in our country is only 62 percent with each hog producing only 102 jin of meat, and with each pig averaging 2 years of feeding till slaughter. With the livestock feeding time being so long, much fodder and labor is wasted. Furthermore,

the composition of our country's herds is also irrational. Currently, in countries where livestock raising is advanced, the proportion of breeding cows is usually around 60 percent, and the proportion of breeding ewes is usually about 70 percent. The feeding period for commodity meat livestock, moreover, is very short with the turnover time for livestock herds being very rapid. Generally beef cattle are slaughtered when they are a year and a half old when their carcass weighs about 300 jin. Lambs are fattened for slaughter within 6 months when their carcass weighs about 35 jin. Slaughtering of slaughter cattle amounts to one-third of the herds, and slaughtering of lambs may amount to one-half the herds. The proportion of dams of proper age in the cattle herds of our own country is only about 30 percent; in sheep herds it is only about 40 percent. Three years of fattening are required in the case of cattle, and more than 1 year in the case of sheep. In 1978, sheep slaughtered amounted to only 20.6 percent of total herds, and each sheep produced only 20 jin of meat. Cattle slaughtered accounted for only 6.4 percent of total herds, and each head produced only 137 jin of meat.

Though our country presently has 3.3 billion mu of grassland for use, as a result of the singular pursuit of animals on the hoof, the indiscriminate opening of land to grazing, the excessively large numbers of cattle retained, and the serious desertification, alkalization, and retreat of the grasslands, the amount of grass has declined to about one-half of what it was during the period immediately following Liberation. In the pastoral regions of north China, during the 4 to 6 months of summer and autumn, the forage grass grows luxuriantly and the herds put on weight and grow in strength. But during the winter and spring seasons when the grass withers for a period of 6 to 8 months, the herds live with hunger and cold and a large number die. Rough statistics show that each year several million cattle are lost this way in the pastoral regions of our country. In the Ikhkhomeng pastoral area of Nei Monggol alone, between 20,000 and 30,000 head of cattle die every winter and spring for lack of grass, and the cattle that survive show a winter and spring weight loss of one-third. Loss through death and drop in weight amounts annually to about five times the amount of state purchases of meat.

It is necessary, therefore, that future work in the livestock industry focus on increasing the slaughter rate and the amount of meat produced. First, it is necessary at the onset of winter to have a planned culling of old and weak animals. Second is a need to promote slaughtering of the current year's lambs because current year lambs usually reach a weight of 25 to 30 jin. If they are held over for another year, their weight will increase by only an additional 7 to 8 jin, and the cost of the additional amount of labor, fodder, and medicines required may well exceed the value of the additional amount of meat. Additionally, the danger of death during wintering over will have to be faced if they are kept. If, before the onset of winter, some are slaughtered, a specific amount of meat and wool will be obtained and there will be a saving in manpower and fodder, which

can be concentrated on feeding the remaining animals. Only in this way can the quality of herds be upgraded and further retreat of the grassland vegetation cover be reduced, and only in this way can the turnover period for the animals be effectively shortened, the commodity rate and the rate of meat production be steadily increased, and the number of cattle produced per unit of range be increased. Of course, solution to the problem of "winter leaness and death in the springtime" will require attention to the building of the grasslands, and large scale planting of pasturage to solve the problem of storage of fodder for winter and spring. It will also be necessary to develop the fodder industry and adopt scientific methods for raising cattle.

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OPTIMISTIC PLANS FOR DEVELOPMENT OF NORTHWEST, LOESS PLATEAU

Beijing RENMIN RIBAO in Chinese 21 Apr 80 p 4

[Article by Tong Dalin [4547 1129 2651], excerpted from a speech made by the author in Xian in April 1980 at the Scientific Symposium on Overall Control of Erosion of the Loess Plateau, "A Talk on the Outlook for Modernized Construction of the Loess Plateau and the Northwest Region"]

[Text]

I.

Are the loess plateau and the great northwest bleak, desolate, and poverty stricken? Yes and no. In the process of the four modernizations, is this region destined to be more backward than the splendid land south of the Yangtze River? Not necessarily; it is up to us.

The great northwest consists of two large treasurehouses.

One is its inexhaustible energy resource deposits.

Let us begin by talking about the sky. The solar energy resources of the northwest region are the most abundant in China. There are about 3,000 hours of sunshine annually. The sun's rays at exactly noon can produce 1,000 kilowatts of power per square meter of surface area of the earth. Wind resources are also extremely abundant there. A windmill already functioning there is in an operating mode more than two-thirds of each year.

Of the theoretical reserves of more than 65 million kilowatts of hydropower in the upper reaches of the Yellow River, only somewhat more than 2 million kilowatts have been developed.

The loess plateau and the northwest region have about 70 percent of the total geological reserves of coal in the country. The largest coalfield in the country, the Shaanxi-Gansu Ningxia-Shanxi coalfield, has an area of about 200,000 square kilometers, with extremely abundant reserves. The region of the Dzungarian Basin in Xinjiang is similar. Abundant reserves of petroleum have been verified at Yumen, Dushanzi, and Karamai, and a new oilfield has been discovered in the Tarim Basin.

The other great treasure is the ideal production center for animal protein.

The great northwest is an ideal natural livestock area. There is lots of sunlight and the difference between daytime and nighttime temperatures is quite great, which is beneficial for the propagation, growth, and development of animal feed crops and pasturage. Geographically, the area is characterized by mountain ranges that isolate the area and can reduce the transmission of disease germs, which makes it extremely beneficial for the large-scale raising of livestock and poultry.

Even more important, this area possesses superior conditions for the formation of a complete and magnificent biological food chain.

--Large-scale planting and growing of pasture grass, dwarf forests, and dense forests. The pasture grass is for the feeding of cattle and sheep; the dwarf forests are the principal food source for some species of animals; and the dense forests can both husband water resources and regulate climate.

--large-scale plantings of fruit trees. The greater the area planted to fruit trees, the more the insects proliferate and the better the wild animals and birds flourish. This is an important link in the strengthening of the biological food chain.

--Construction of dams and water conservancy projects. These can prevent floods, generate electric power, and raise fish, but in addition they can also irrigate the pastureslands, help the growing of cattle feed and promote the propagation of dairy cows, slaughter beef and hogs, and poultry.

People know that the human body depends principally on protein, carbohydrates, fats, vitamins, and inorganic salts for nourishment. Protein is the most important single component of the human body and a major indicator of a well-balanced diet. The nutritional value of animal protein is higher than that of cereal grain protein. Future changes in the structure of our diet will depend principally on a great development of the livestock industry, meaning a large increase in animal protein. This is a new problem that must be given serious consideration in the development of our country's agriculture.

Central to the development of various energy resources and new food sources--as well as to use of the other abundant natural resources of the northwest region and the modernization of the industry, agriculture, and science and technology of the great northwest region--is the need for a great new overall pattern. Should there be any hesitation about this!

Apart from our need for advanced science and technology and powerful production techniques, abundant natural resources and energy resources are the dominant objective conditions governing the fate of our country's modernization. Consequently, the questions may be raised here as to what priority should be given to the construction of the great northwest in

the modernized construction of our country, and what are its future prospects? I believe that if only our subjective activity matches objective natural laws and economic laws, will the richly endowed great northwest paint the newest and most beautiful picture in our country's four modernizations. If handled properly, the northwest can surpass the area south of the Yangtze. This is no overstatement. In 1850 the western part of the United States was still bleak and desolate. At that time people felt that it would take at least 500 years or possibly even 2000 years to tame this region. Today a fundamentally changed outlook about the western part of the United States has taken place. What the United States was able to do very quickly under the capitalist system, we should also be able to do under socialism, and be able to do it even better.

II.

On the basis of natural laws and economic laws, the loess plateau of the northwest should be made into either a livestock base or a forest base (or a forest and orchard base).

By building two such bases, not only would the problems of the construction of production and the backwardness and poverty of the livelihood of the people be solved, but water and soil erosion could be cured at its source and a northern obstacle to the desert's onslaughts would be built.

Success has been achieved after 5 years of continuous experiments with the use of aircraft to sow "shadawang" [3097 2092 2489]. Shadawang is a perennial legume of the pulse family used as forage grass. It has a high output, abundant nutrition, imparts fertility to the soil, and is effective in the control of erosion. If further planting of various forage grasses suited to loess soil [was undertaken], and various economic forests, fuel forests, pasturage forests, timber forests, water and soil conservation forests, wind prevention and sand stabilization forests were planted, then control of the erosion of the loess plateau and the building of production would be just around the corner, along with a new look in the livelihood of the people.

It can be asserted that the development of a livestock industry and a forestry and orchard industry in the loess plateau has very hopeful outlook. Here only two examples will be given.

Let's take sheep, for example. A single fine wool sheep will produce at least somewhat more than 10 jin of wool. In Mizhi County, as an example, the use of 400,000 mu of land to grow pulse forage grass for sheep raising brought an income of more than 8 million yuan annually, which is five times more than the current fiscal income of this county. Ningxia Province's furcoats made from the wool of tan [3492] sheep are internationally famous. Yanchi County annually produced more than 1 million jin of sheep's wool for an income of 1.5 million yuan. If [the wool were] spun into yarn, the income could be several million yuan, and if woven into rugs for export, the income would be even more sizable. Additionally, development

of milk goats in quantity increased the income of peasant households and was extremely remarkable.

Now, let us take fruit trees as an example. The author Comrade Liu Qing [2692 7230] very correctly proposed during the 1950's that the climate and soil and topography of the northern Shaanxi region would make a naturally ideal place for apple orchards. Were all the slopes to be planted in trees, the northern Shaanxi region would become one of our country's advanced economic areas, a horticultural base, and become a world famous apple orchard. He also planned a most ideal economic geography for northern Shaanxi: slopes--ridges--valleys--orchards--mulberry groves--grain. Here I would like to add two points. The first is to let all mountain tops wear "grass hats"--the growing of grass; and the second is the growing of some more millet in dry fields. If millet's reputation were restored, the peasants would be happy.

Most recently, a professor at the Northwest Agricultural Academy, Comrade Sun Hua [1327 5478], made a very fine suggestion on how to develop fruit orchard production throughout the entire northwest. He believes that the northwest region, with its large number of mountainous regions, hills, sandy wastes, and sandy beaches, would support fruit orchards everywhere. For example, along the banks of the Yellow River in northern Shaanxi, large numbers of red dates could be grown. Grapes could be grown in the hilly regions of northern Shaanxi. On the northern Wei Plateau, apples could be developed. In the mountainous regions of the Qinling and the Bashan, there could be quantity growth of walnuts and Chinese chestnuts. In southern Shaanxi, oil olives and citrus fruit could be grown. In Guisui and Qingyang prefectures in Gansu, apples could be grown, and in the western corridor of the Yellow River (particularly at Linze and Dunhuang), and in the sandy regions of Ningxia, there could be large-scale production of red dates and grapes. In Xinjiang Province there could be large production of grapes, particularly of the varieties used for making raisins (Turfan is world renowned as a raisin-producing area), and there could also be quantity production of walnuts, almonds (*prunus amygdalus*), apricots (for dried apricots and for apricot kernels), and pistachio nuts and such oil-bearing trees. At Minhe, Ledu, and Guide in Qinghai, and at Lingwu in Ningxia, apples may be grown.

In addition, methods may be suited to circumstances for the planting of strongly resistant bush fruit trees and fruit-bearing vines, as for example, raspberries, gooseberries, maoyingtao [3029 2375 2711], pomegranates, mountain grapes, etc. These kinds of fruits can be turned into jams, fruit wines, and fruit juices. Planting of these kinds of trees can play an active role in the overall control of erosion.

In regions suitable for the planting of grain and cotton, such as the central Shaanxi Plain, the bend of the Yellow River, and some places in Xinjiang, special attention should be given to the construction of modernized commodity grain and cotton bases.

If good across-the-board planning for the development of agriculture is done, and a rational irrigation system and shelter forests are built to improve the local soil, the so-called yellow sands of the "Great Gobi" as far as the eye can see will turn into valuable land, with cattle and sheep running everywhere, and with forests and orchards covering the mountains. This is a song of vision from a realist, and not the fanciful dream of a "romanticist."

III.

To accompany the building of livestock industry bases and forestry industry bases on the loess plateau, there must be the rise of modern industrial cities. For example, Yanan, Suide, and Yulin in northern Shaanxi will become industrial cities. If the swift current of the Yellow River is used for the construction of large and small hydroelectric powerplants, while at the same time railroads and highways are constructed to radiate in all directions in the vigorous development of communications and transportation, the isolation and semi-isolation of the loess plateau from the interior of the country and from other economic regions will be broken, and it will become connected with the markets in the interior of the country.

To set up an animal protein production center requires, as the economists point out, the establishment of new electrified slaughterhouses, dairy product processing plants, sheep's wool processing plants, wild animal breeding and raising farms, cold storage lockers, and even airfields for air transport in the northwestern region.

Where should one start with a blueprint for large-scale modernized construction such as this?

As a matter of elementary Marxism, all systems, organizations, series of concrete policies, and measures pertaining to production relationships must be suited to the development of new productivity, rather than have the new productivity accommodate to the old rules and regulations pertaining to production relationships. Therefore, the problem is very clear. First of all there must be reforms made to the economic system and to organizations for self-sufficiency; instead of resorting to coercion and commandism, inflexibility, and uniformity, there must instead be the building of a production form in which the socialist commodity economy is the central [aspect]. This is to say that we must go the road of the domestic and foreign marketplace, and particularly of the international marketplace, with their close relationships between enterprises and specialization. Unless we do this, no production bases can be founded.

At the present time an effort is being made to reform the system of management of the national economy that entails establishment of a nationwide silk company, in which the process of silk production and the process of turnover are organically linked to form an integrated whole that includes production, supply, and marketing in an independent accounting economic

organization that is socialist in character. The thrust of its operations are, first of all, to think of ways to actively support production through economic and technical means, to strengthen scientific and technical work, and to train technicians. The objective of such an economic organization would be to set up an internal sales market, and especially to strive to enlarge exports to enter the international market. As an example, the livestock industry and the forestry and fruit industry of the loess plateau and the great northwest would undergo great development, and it could concentrate on two or three kinds of products (such as furs and fresh fruit) for the experimental establishment of a regional new type of enterprise, with exports to other regions being the objective, to put some vim into production, supply, and marketing, as well as into agriculture, industry, and commerce.

In present-day terms, the mixing together in one body of administrative divisions and economic organizations is no longer suitable to the needs of modernized construction. Currently, some places are in the process of trying out a different kind of experiment, advocating that a start be made with brigades and brigades, communes and communes, agriculture and industry, agriculture and business, and with ecological divisions and production needs, to carry on a unified operation centered on a river or a stretch of mountain to give further form to the integrated organization of scientific research and the economy. Such a grassroots new style of economic organization, if linked to regional or nationwide large enterprises, could become the embryo for our modernized economic system.

The above makes clear that if it is decided to change the poverty-stricken and backward features of the loess plateau and develop a strong livestock industry and forest and fruit industry, various experiments will have to be begun in reforming the economic system.

IV.

The training and bringing into being of millions of personnel for modernized construction is, in the final analysis, the principal task in our country's modernization. This problem is extremely apparent and even more urgent in the construction of the loess plateau and the great northwest. In the old China, countless persons possessed of lofty ideals and filled with the dream of "science to save the country" silently endured extreme hardships in "remote regions" of their motherland, shedding sweat, tears, and blood. They are worthy of the name of pioneers among our country's scientists. Following the establishment of the People's Republic, a mass of hot-blodded young men and women from near and far came running--just as the revolutionary youths of other years had come running to Baodashan in Yanan--determined to dedicate their youth and their intellect and offer their bodies to this most farflung region of their motherland, and to carry out a most arduous enterprise of developing the borderlands, such as is difficult to imagine. They traveled a road of suffering and had a 10-year history of chaotic grief, but quite a few of them persevered to become the current mainstays in the building of the loess plateau

and the great northwest. But in comparison with the great undertakings that lie ahead, there are too few people to bear the burden of modernized construction, and this is a sharp contradiction.

We should build all sorts of economic organizations and production bases, but first it is necessary to develop a foundation of qualified persons. Unless there is a sufficient number of qualified people, modernization is nothing more than building castles in Spain.

Scientists and educators in our country know that a rare flowering in science and education is taking place in this region, which has been considered culturally backward. This flowering has taken place at Wugong in Shaanxi, where for the past several decades there has been a concentration of scientists and educators to form an agricultural science and education base. Currently there are nine scientific research and educational units here: the Northwest Academy of Agriculture, the Northwest Academy of Forestry, the Northwest Water and Soil Preservation Institute of the Chinese Academy of Sciences, the Shaanxi Provincial Academy of Agriculture and Forestry, a plant institute, an institute of water conservancy, an agriculture and forestry school, a water conservancy school, and the Wugong Agricultural Research Center. There are more than 2,000 researchers and teachers, and more than 3,000 students. What a precious force this is. Consequently we suggest that this base of human talent be enhanced and enlarged, and that a series of correct policies be set up and various effective measures taken to make it become a magnet that attracts scholars from every field of science and education both at home and abroad, to turn it into a breeding ground for the training of group after group of scientists and technicians, particularly the training of qualified scientists and technicians from among our kindred minority peoples, and to make it the best academic center in our own country and internationally. Other provinces and regions should also have bases for the training of personnel in modernized construction. In a certain sense, in modernization the construction personnel decide everything.

The northwest is a fine place. It was the birthplace of our Chinese race; it is the sacred revolutionary soil from which the Chinese Communist Party led the Chinese revolution to victory; and it will be a richly endowed and treasured place for our country's four modernizations.

9432

CSO: 4007

SURVEY, COLLECTION OF CROP VARIETIES COMPLETED

Beijing GUANGMING RIBAO in Chinese 19 Apr 80 p 1

[Article: "Nationwide Survey and Collection of Plant Variety Resources Produces Outstanding Results"]

[Text] Over the past year, more than 20 of this country's provinces, municipalities and autonomous regions organized more than 2,500 agricultural science and technology cadres and nearly 40,000 commune members for supplemental collection of crop variety resources and key survey work. By the end of last year, the various localities had collected more than 29,000 specimens of local varieties of various crops, varieties closely related to wild plants, of which Guizhou, Hubei, Shanxi and Shanghai collected more than 15,000.

The local varieties collected included many rare and valuable ones. Among paddy rice varieties there is one in which each ear bears 200-300 grains (generally there are only about 100), and for which the weight of 1,000 grains is over 35 grams; there is a variety which can ripen normally even when the annual rainfall is less than 4,000 mm; there is a disease-resistant and cold-resistant variety which can produce well on north-facing slopes with extremely short illumination periods; there is a variety with high yield and excellent qualities, resistant to low temperatures, overcast and rain, resistant to lodging, and with high resistance to blast. Among legumes, there are tall, many-branched plants with a high fruiting rate and a heavy rate per hundred grains; there is a variety with a hundred-grain weight of 50 grams, with cold and disease resistance which ripens early and gives high yields; there is a cold, drought and high temperature resistant variety whose pods do not burst in the field and which is easily shelled when all harvesting is done at one time. Among corn varieties, there is one with a heavy weight per hundred grains, excellent quality and cold resistant which is free of leaf spot, and a variety that is resistant to cold and does well on poor soil, with good fruiting characteristics and a growth period of only 60 days. In addition, uncommon varieties of ordinary wheat and high-quality, good-tasting potato varieties were collected.

Wild paddy rice and wild soybeans were resources which were stressed in surveys and were collected. More than a thousand specimens of ordinary wild paddy rice, medicinal wild paddy rice and wart-grained wild paddy rice were collected in 77 counties in Guangxi, Guangdong and Yunnan. The Guangxi Zhuang Autonomous Region made a basically complete survey of wild paddy rice distribution in the region. Nine provinces stressed surveys of wild soybean resources; more than 3,100 specimens and 2,500 seeds were collected and some materials with unusual characteristics were discovered, such as white-flowered varieties (most wild soybeans have purple flowers), a variety with more than 80 branches, a variety more than 5 meters tall, a variety with as many as 46 nodes and the like. The protein content of some of the wild soybeans was 5 to 10 percent higher than that of cultivated varieties.

This mass collection work was done on the basis of a notice issued by the Ministry of Agriculture and the State Committee on Science and Technology last June. In the first 10 days of this March, the Chinese Institute of Agricultural Sciences held a nationwide crop variety resource survey and collection report conference; the representatives at the meeting all believed that this country's rich crop variety resources are a material base for theoretical research in crop breeding and for the breeding of new outstanding varieties, and that the conscientious collection and preservation of these varieties will have an important effect in accelerating this country's agricultural development.

8480

CSO: 4007

NEW SORGHUM VARIETY PLANTED IN FIVE PROVINCES

Beijing GUANGMING RIBAO in Chinese 21 Apr 80 p 2

[Article: "Birth of a New High-Yield, Good-Tasting Sorghum Variety"]

[Text] According to LIAONING RIBAO, a long hoped-for good-tasting, high-yield new sorghum variety, Tieza [T'ieh-tsa 6993 7177] No 6, has been successfully bred by the Tieling Prefecture Agricultural Sciences Institute.

This new sorghum variety was named and disseminated last year by the province's Agricultural Crop Variety Inspection Committee and won a third-class province award for major scientific and technical achievement; in nationwide spring-sowing late-ripening area experiments it was among the most successful candidates, receiving a good evaluation. Last year more than 300,000 mu in the province were already sown to it, and this year the area sown to it may be increased to 3 million mu. In addition it is being introduced in Shaanxi, Hebei Hunan and Gansu. It will replace Jinza [Chin-tsa 2516 7177] No 5, as the main variety in several areas in the province and elsewhere.

In order to solve the old and knotty problem of hybrid sorghum's being "bad-tasting, hard to cook, a loss to the country, a hardship to the peasants," scientific and technical personnel of the Tieling Prefecture Agricultural Sciences Institute's sorghum group began in 1970 to carry out experimental studies of the relationships between the lines of the "eight main categories" of sorghum, producing 369 specimen of recurrent lines, from which they selected and bred "Tiehui [T'ieh-hui 6993 1863] No 6" which had good grain quality, good cutin, dense packing, strong combining ability and good recurrence ability. In 1975 they successfully bred the Tieza No 6 hybrid. In that year they went to Hainan Island to produce seed, and in 1976 they set up two seed bases and grew more than 10,000 jin of good-quality seed. Starting in 1977 they carried out large-area test plantings, with the yield per mu generally reaching 1,200-1,300 jin. In many localities excellent harvests were realized under dry conditions worse than had been seen for many years. Tieza No 6 sorghum, with its high yield, good grain quality and large grain production rate, is being warmly welcomed by the masses.

SUGAR CANE OUTPUT STAGNATION SAID CAUSED BY POOR PLANNING

Beijing RENMIN RIBAO in Chinese 21 Apr 80 p 2

[Article: "Why Is Cane Sugar Output Not Rising?"]

[Text] The natural conditions for sugar cane growing in this country are similar to those in Australia. Every year Australia plants 5 million mu of land to sugar cane and produces 3 million tons of sugar; every year our country plants 9 million mu to sugar cane and produces 2 million tons of sugar. The yield per unit area is almost two times greater in Australia. What is the reason? One very important point is that account has not been taken of local conditions in sugar cane planting, and it has not been suitably concentrated. Grain self-sufficiency has been advocated to an excessive degree for land on which is suitable for growing sugar cane, rather than planting more sugar cane and exchanging more commodity sugar for commodity grain; and sugar self-sufficiency is advocated to an excessive degree on lands that are not suitable for growing sugar cane. This is one reason why although this country has a large area sown to sugar cane the sugar output is low.

In the Jiulong River region of Fujian, which is in the semitropical zone, the climate is mild, there is abundant rainfall, and the frost-free period is over 300 days, so that it is one of best-suited regions in the country for sugar cane cultivation. Buwen Commune in Longhai County in this region plants only 18,000 of its 50,000 mu to sugar cane; the average yield per mu has reached 6 1/2 tons, close to the level for Australia. Last year the commune's party committee proposed decreasing the area sown to paddy rice by 2,000 mu and planting this land to sugar cane instead, so as to carry out the sugar cane-sugar cane-paddy rice rotation more rationally and attain a level of 1 ton of sugar per mu of sugar cane within a year or two. However, the county leadership declared that although this commune's land would produce high yields of sugar cane it would also produce high yields of paddy rice, and the paddy rice land could not be decreased by even a single mu, with the result that the commune's rationalizing plan was not implemented. Staff member Xie Fengshan [6200 7364 1472] of the Institute of Scientific Information, Longxi Prefecture, acting in the spirit of the Central Committee's request that a domestic-oriented approach be taken to solving the sugar problem, proposed last September as a long-range plan that Longxi Prefecture

allocate a million mu of arable land for sugar cane and furnish the country with a million tons of sugar a year. Again owing to the fact that the contradiction between sugar and foodstuffs has not been solved, this proposal was not taken seriously by the leadership.

Moreover, as the writer understands it, some districts where sugar cane cultivation is not rational, such as the Lake Dongting area in Hunan and Wenzhou Prefecture in Zhejiang, have in recent years been continuously expanding sugar cane cultivation, setting up sugar plants and developing sugar production. In reality this is very unprofitable. The Dongting Lake and Wenzhou regions produce a ton of sugar for every 7 or 8 mu on average, while the Jiulong River region in Fujian averages a ton of sugar for 0.7 mu of land. If similar areas took account of local conditions, crossed over province boundaries, and concentrated sugar cane cultivation where it should be concentrated and paddy rice cultivation where it should be concentrated, our country's sugar cane production would take up a smaller area, produce higher yields and expand faster.

In this country's sugar cane producing regions there are 33 large sugar plants with capacities of 1,000 tons or above, and these are in the main distributed rationally. However, in the last decade the construction of large, medium and small plants together has been blindly advocated, and small plants which compete for materials with large plants have even been built in the latter's sugar cane bases, so that the large plants have insufficient materials. This is another factor which has caused this country's cane sugar production to be low and its quality to be poor.

The fate of this Jiangmen cane sugar processing plant can make the problem clear. This plant is on the Pearl River delta in an area of concentrated sugar cane production, has the capacity to press 4,200 tons of cane a day, has the highest production efficiency in this country's cane sugar industry and is the advanced enterprise with the best integrated utilisation. The plant requires 500,000 tons of sugar cane a year, which is supplied entirely by Xunde, Zhongshan, Xinhui and Doumen counties in Foshan Prefecture. Because simultaneous construction of large, medium and small plants was blindly advocated, and because the economic system was not sufficiently rational, so that the Jiangmen plant's profits and tax payments were not coupled with the finances of Foshan Prefecture which supplies the raw materials, these four counties have set up 12 small sugar plants which can press about 300 tons a day, and which compete for raw materials with the Jiangmen plant. The amount of sugar cane received by this plant every year is equivalent to only about 56 percent of its capacity. The difference in the economic effect when a given amount of sugar cane is processed by the large plant and the small plants is extremely great. For every ton of sugar cane which the Jiangmen plant presses, it creates about 200 yuan of value for the country, while for every ton of sugar cane which the 12 small plants press they create only about 120 yuan of value.

Many years' experience indicates that the size of sugar plants should not be too small. If they are too small, they will not be able to produce machine processed sugar which meets the standards, but will be able to produce only low quality powdered sugar; and if they are too small the precious sugar cane raw material will not be utilized in a sufficiently comprehensive fashion. Accordingly, small sugar plants built in the areas of large sugar plants which compete with them for materials should be closed for a limited time and converted, depending on local conditions. Provided that unanimity of views is achieved and we solve the problems with the economic system, we can do this work well. When Fujian Province closed two small sugar plants near the Zhangzhou sugar plant which competed with it for raw materials, it handled the matter rather well.

8460

CSO: 4007

BRIEFS

SUNFLOWER PLANTING--CHINA NEWS AGENCY, Beijing, 4 May--This year, China plans to sow about 8 million mu of land in sunflowers, an increase of 50 percent over last year. At the present time, in most prefectures of Jilin, Liaoning, Inner Mongolia, Ningxia, Shanxi, and Hebei, the sowing is already complete, with the actual area sown in excess of plan. Sunflower seeds have a high oil content, and their oil is of high quality. It is an edible vegetable oil of high nutritional value that serves to reduce adipose fat and cholesterol in the human body. Sunflowers are also resistant to drought and cold, able to tolerate poor soils, able to tolerate alkalinity and salinity, and are highly adaptable. They are exceptionally well suited to planting in numerous parts of our country, particularly in northeastern and north China. In recent years, as part of efforts on the part of units concerned to change the proportionate composition of edible oils, the planting of sunflowers has been actively advocated. The planted area has thus gradually increased, and this year it has reached the highest recorded level in history. Heilongjiang, Jilin, and Ningxia have set up sunflower production bases. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 5 May 80 p 8] 9432

AQUATIC PLANTS AS FODDER--CHINA NEWS AGENCY, Shenyang, 21 Apr--Scientists and technicians at the Yingkou Municipal Saline and Alkaline Land Use Institute, in Liaoning Province, have achieved success with their active introduction and study of the use of aquatic plants for fodder. They have grown more than 10 varieties of plants from the country's southland, including luping [4845 5493], water hyacinths, water cabbage, and water caltrop; they have mastered the [plants'] characteristics; and they have summarized a series of production techniques and methods of tending them during wintering over, spring propagation, and summer growth. At the present time, these more than 10 varieties of aquatic plants are being promoted for cultivation in 26 municipalities, regions, and Zhou and in 154 counties, prefectures, communes, and state farms in the three provinces of the northeast. Their area of propagation is more than 40,000 mu of water surface. Use of aquatic plants as fodder will save more than 400 million jin of cattle and poultry fodder, grain husks, and chaff. Some units are already using aquatic plants to meet 70 percent of their total fodder needs for hogs and poultry. Experience has demonstrated that the use of aquatic as fodder causes the hogs to fatten more rapidly, and when used to feed chickens and ducks, they produce more eggs. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 22 Apr 80 p 2] 9432

UN GRAIN STUDY GROUP--Hangzhou, 19 Jul--The twelve members of the study group on post-harvest grain technology in China under the sponsorship of the Food and Agriculture Organization of the United Nations (UNFAO) visited the Zhejiang Provincial Grain Research Institute and the Changqian Grain Store of Yuhang County from 13 to 19 July. The Changqian Grain Store, which has been free of insects, mildew, mice and accidents since 1954, has stored 500,000 tons of grain without loss. The UN delegates were impressed by the achievements of the research institute and the grain store. Ernest de Las Casas, post-harvest loss reduction officer of the UNFAO who heads the study group, said: "I have been to many countries but I have never seen a grain store as well managed. Your methods are practical and scientific. They are good not only for China but also for other Afro-Asian countries." Members of the group will shortly leave Hangzhou for Guangzhou. [OW211215 Beijing XINHUA in English 1251 GMT 19 Jul 80]

WOOL PURCHASES--CHINESE NEWS AGENCY, Beijing, 25 March--Last year the nation purchased 305 million jin of wool, 10 percent more than the purchase plan. During the last 3 years, the number of sheep increased a relatively large amount in our nation's grazing and agricultural regions. One of the major grazing regions is Inner Mongolia. Last year, it strengthened the work in improving the varieties of sheep and selective breeding of superior varieties. It also encouraged the farmers and herdsmen to raise sheep simultaneously with the efforts to firmly develop collective sheep raising. The development of sheep raising was fast. Authorities of the entire region purchased nearly 70 million jin of wool. In Shandong and Anhui, commune families were encouraged to raise sheep. Last year's purchases of sheep by the authorities registered increases of between 23 and 34 percent over the previous year. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 25 Mar 80 p 1] 9296

AGRICULTURAL MECHANIZATION--CHINESE NEWS AGENCY, Beijing, 18 March--Our nation's total agricultural machinery has gradually increased. Agricultural machinery's total number of tractors is over 2 million units. There are over 3 million units of motorized machinery for drainage and irrigation. Machinery for foodstuff, cotton, and edible oil processing numbers over 3 million units. As agricultural machinery increases, our nation will have an agricultural machinery team of several million people. In recent years, our nation's agriculture has continued to increase its production, and agricultural machinery has played an important role. In 1978, Jiangsu, Hubei, Anhui, and 11 other provinces mobilized diesel machinery totaling over 21 million horsepower and electrical machinery totaling 10 million kilowatts of power in the struggle against drought. Over 170 billion cubic meters of water were channeled and drawn--equivalent to the total flow of the Yellow River over 3 years. The drought was greatly reduced. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 19 Mar 80 p 1] 9296

'RENMIN RIBAO' ON CHANGES--RENMIN RIBAO in Chinese on 27 June 1980, page 1, published an editor's note praising the measures taken by Tongren Prefecture of Guizhou to avoid making changes on ownership and job responsibility systems during the busy summer farming period. The editor's note reads as follows: "The current period is a very busy period for summer harvesting and planting. Some counties and communes are still making changes in matters concerning the ownership system and the job responsibility system. This is extremely detrimental to the current farm work. To prevent delays in doing a good job in this year's farm production, especially in the autumn-ripened crops, it is better to have stability in the ownership system and in all forms of job responsibility systems, and not to change repeatedly in order to avoid missing the farming season. The methods adopted by Tongren Prefecture of Guizhou to handle similar problems are correct." [Editorial Report]

COTTON ACREAGE ENLARGED, GRAIN REDUCED--In an article appearing in Shandong's DAZHONG RIBAO in Chinese 6 July 1980, page 1, on how to control cotton insect pests, Wang Dehsia, a technician of the Plant Protection Bureau of the Ministry of Agriculture, revealed that "this year's [total] grain crop acreage, especially the area planted to spring corn, was reduced, while that of cotton was enlarged." [Editorial Report]

BRIEFS

RESPONSIBILITY SYSTEM BOOSTS OUTPUT--The job responsibility system in Fengyang County of Anhui helped to bring about a bumper grain harvest this summer. The total output reached 200 million jin, 10 percent above that of 1979 (the first year in which this system was implemented), or 2 times as much as in 1977 (a normal year without the benefit of this system). The main reason for the huge increase in summer grain output this year is the adoption of this system by a large number of low-yielding, poor communes, in which this system was implemented down to the work teams. [Beijing RENMIN RIBAO in Chinese 29 Jun 80 p 1]

CSO: 4007

BEIJING

BRIEFS

FRUIT SUPPLY, CONSUMPTION--Beijing, 23 Jul--Beijing's month-long watermelon season is providing residents with some relief from the sultry heat. Supply now averages 2,000 tons a day. The City Fruit Company expects the total yield on the Beijing outskirts to reach 30,000 tons. To meet market demand, 15,000 tons will be shipped in from other places. Government policy now encourages watermelon growing. A production team can get a 150 yuan bonus for a hectare if it plants more than one hectare with an average yield of about 30 tons a hectare. Eighty percent of the bonus is distributed to the team members. Fruit consumption in Beijing is on the increase. In 1979 the city sold 170,000 tons of fresh and dry fruit as against 130,000 tons in 1977. Fruit production increased from 30,000 tons at the time of liberation to about 150,000 tons last year. [OW231519 Beijing XINHUA in English 0835 GMT 23 Jul 80 OW]

CSO: 4020

BRIEFS

FUJIAN WATER CONSERVATION--CHINA NEWS AGENCY, Fuzhou, 5 May--Sizable accomplishments have been made in the comprehensive use of water conservancy projects in several thousand places throughout Fujian Province. Last year, total earnings throughout the province for the supply of water, raising of fish, generation of electric power, building of forests, and growing of fruit from water conservancy projects amounted to 11 million yuan, an increase of 50 percent over the previous year. Fujian Province now has 41 reservoirs of large and medium size and more than 1,000 small reservoirs. It has more than 40 machinery and power drainage and irrigation stations of more than 300 kilowatts. Water is channeled by the blocking of rivers in more than 600 places. There is a great potential for comprehensive use, with the reservoirs alone possessing 220,000 mu of water surface to provide fish. Last year, about 3 million jin of freshwater fish raised in reservoirs were provided to the marketplace. Nowadays every place is using water for irrigation, and hydroelectric power stations have been erected in more than 300 places with an equipment capacity of more than 90,000 kilowatts. Annual production of electric power amounts to 200 million kilowatt hours. Many places also use the reservoir zones and reservoirs to develop various kinds of sideline production and increase their earnings. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 5 May 80 p 9] 9432

SUGARCANE RESEARCH--Fuzhou, 14 Jul--A research center has been set up in Fujian Province to engage in large-scale, comprehensive study of how to raise sugarcane output. It is the first of its kind in China. The research center, covering 660 hectares of sugarcane fields in 18 production brigades belonging to 4 people's communes, is located in Xianyou County, which ranks first in per-hectare sugar yield of all counties in China. During the 1979-1980 sugarcane-pressing season, a total of 102,000 tons of sugar were produced from the cane gathered on Xianyou County's 8,000 hectares of farmland, setting a countywide record of 12 tons of sugar per hectare. Among those working in the experimental center are 70 agronomists and technicians guided by the sugarcane specialist Professor Zhou Keyong, vice-president of the Fujian Agricultural College. The research subjects being studied include ways of raising the utilization rate of sunlight in cane fields, the selection of high-yield varieties, the relation between weather and the sugar content of the cane, sprinkling irrigation, and the multiple utilization of cane. [OW151045 Beijing XINHUA in English 1224 GMT 14 Jul 80 OW]

BRIEFS

INDIVIDUAL HOUSEHOLDS RAISE LIVESTOCK--Last year the Gansu party committee and provincial government announced that individual commune members or their families were allowed to raise livestock without restriction on the number of livestock raised if they had the technical know-how and the experience. Since then, a large number of households have emerged from rural areas and suburbs of cities in Gansu as "specialized households," raising pigs, chickens, rabbits, bees, flowers or medicinal herbs. One commune member raised more than 70 sheep, 1 cow, 1 pig and 15 rabbits last year, earning more than 800 yuan. Many production teams also have adopted a system under which remuneration is based on production, and the producers are allowed to sell their surplus products. Thus the production of these specialized households became a component of the collective production. [Beijing RENMIN RIBAO in Chinese 29 Jun 80 p 2]

CSO: 4007

COASTAL COMMUNES CAN ALSO GET RICH QUICK

Haikang County Example

Guangzhou NANFANG RIBAO in Chinese 22 May 80 p 1

[Article by Ding Jialu [0002 1367 4389] and Tan Limou [6223 4539 6180]: "Part-Fishing, Part-Agriculture Regions Can Also Prosper Quickly; Look to the Boundless Seas To Make the Most of One's Own Advantages"]

[Text] The Sea Brigade of Tandou Commune in Haikang County, which is located on the shore of North Bay, made the most of its advantages, overcome its shortcomings, and took money from the sea by working hard at fishing, saltmaking, and sideline occupations even while working to produce grain.

Though surrounded by the sea on three sides, the Sea Brigade of Haikang County with its more than 4,000 members mostly tilled the land, farming 1,200 mu. This was because they lacked capital and had few fishermen. The land here is sandy, dry, and infertile. Annual grain fields are less than 500 jin per mu. This, plus the action of the "gang of four" during their period of tyranny, when they espoused "grain as the only link" and made a prison of the land, bound people to two or three fen of farmland, and most sideline occupations were wiped out. As a result, they had to depend on unified marketing to get enough grain to eat, and their livelihood depended on relief aid. In 1978 they were still eating more than 20,000 jin of unified marketing grain, and cash distributions averaged only 41 yuan per person per year.

Last year, this brigade conscientiously implemented the spirit of the Third Plenum of the 11th Party Central Committee, criticized the ultraleftist line, and summarized experiences in the search for a means to change poverty into prosperity. Many people noted that the Sea Brigade should turn over a new leaf and not continue simply to stare at several fen of fields, but rather look to the boundless sea and make the most of their own advantageous situation. One of the advantages was the location of this brigade on the shallow ocean bay, a key place to emphasize the fishing industry, the salt industry, and pearl raising industry. A second advantage was that because there were numerous rocks along the sea and numerous seashells as well, a special team could be organized to break up the rocks and sell

them, collect the seashells, burn them and produce lime. A third advantage was the possibility of setting up a transportation unit to undertake sea and land transport. The brigade's party branch effectively strengthened the leadership of each occupation. Of the 11 members of the CCP Branch Committee, 4 took charge of agriculture; 3 took charge of the fishing industry; 3 took charge of sideline occupations; and 1 ran the salt industry. At the same time, 57 percent of the labor force transferred to fishing, salt production, and sideline occupations. After operating the aforementioned industries and sideline occupations, the labor force found opportunities; everyone had work to do. Last year, income from fishing, salt production, and sideline occupations totaled more than 423,000 yuan. This was a 1.8-fold increase over 1978 and amounted to 77 percent of the total collective income of the entire brigade. The growth of industry and sideline occupations provided more than 50,000 yuan of investment funds for agricultural production. These funds were used to sink wells and build ditches in order to improve production conditions and promote the growth of agricultural production. Last year, total grain production for the entire brigade increased by more than 20 percent over the previous year, exceeding the highest levels on record. Cash distributions averaged 111.30 yuan per person, an increase of 70 yuan over 1978. As the livelihoods of the commune members improved, they hurried to build new houses and buy equipment of various kinds.

According to incomplete statistics, since last year the entire brigade has built 34 new brick houses, and 30 percent of the commune members have bought bicycles, wristwatches, and radio receivers. As the income of commune members has increased, they have come to love collectivism more. They acknowledged that all they needed was to correctly understand the advantages of the natural world in their locale, make the fullest use of their own advantages, and be adept at running things; then even a half-agricultural, half-fishing area could also become rich quite rapidly.

A Model To Emulate

Guangzhou NANFING RIBAO in Chinese 22 May 80 p 1

[Article: "Accentuate the Positive and Eliminate the Negative"]

[Text] For a very long time, some of the part-fishing, part-agricultural areas along the seacoast in our province have had a very low level of collective distribution, and the lives of commune members have been quite difficult. Can these places quickly change their poverty-stricken circumstances? Can they, while preserving the aquatic resources of the nearby sea, become prosperous rapidly? Effective answers to these questions possess great significance for the stabilization of the sea defenses of the main southern gateway to our motherland and to the development of a stable and united situation.

The experience of the Sea Brigade of Haikang County has shown that for these half-agricultural, half-fishing areas to make a new start and become prosperous, they must accentuate the positive and eliminate the negative. The negative aspects of these places is their sandy fields and the poor quality

of their soil. Therefore, with a determined manner they must correct the one-sided ways of the past with "grain as the only link," as a result of which they blindly built farmlands along the sea, destroying the natural ecological balance. Only in this way can they "eliminate the negative." The positive aspects of these places are the numerous shoals in the ocean bays, and the ample labor force. Therefore, even while giving attention to the production of grain, they must vigorously develop hatchery industries in the ocean waters and find materials in the local areas for launching industrial and sideline occupation production. In this way they can accentuate the positive aspects of the local area and bring about a surge of prosperity from all sides. Within the space of a single year, the income of this brigade increased greatly, and grain production also underwent a rather large development, amply demonstrating this principle.

We hope that comrades in part-agricultural and part-fishing areas throughout the province will correctly analyze the natural conditions in their local areas, and that they will consciously accentuate the positive while eliminating the negative to bring about prosperity in the shortest possible time.

9432

CSO: 4007

SEASONAL PROBLEMS FOR LATE RICE REVIEWED

Guangzhou NANFANG RIBAO in Chinese 25 Jun 80 p 2

[Article by Shi Shanyu [2457 0810 3974] and Tu Yuexian [3205 1878 6343], Provincial Meteorological Bureau: "A Talk On Seasonal Problems in Late Rice Production"]

[Text] The late rice crop is now being sown in place after place in our province. Careful attention to the production seasons is a key link for getting bumper harvests from the late rice crop. The year 1977 was a typical one for reduced late crop yields in our province, the reason lying in delay in the season for the early crop, which required that late crop production be pushed back, as a result of which a severe "cold dew wind" disaster was created. In 1977, people absorbed this lesson, paid careful attention to the seasons, and the transplanting of seedlings for the late rice crop was virtually completed throughout the province before 1 August. As a result, the harvest was the highest ever recorded. In 1978, despite emphasis at every echelon of leadership on early sowing and early transplanting of seedlings for the late rice crop, the season was delayed because of tardiness in harvesting the early crop. This, plus the incomplete preparations made for late rice crop production, resulted in a year of reduced production. During the past few years, output from the late rice crop has fluctuated from somewhat more than 1 billion to somewhat more than 2 billion jin as a result of seasonal problems. From this it may be seen that strict attention to the late crop production season is exceptionally important. On the basis of the laws governing the farming weather during the growth period for late rice in our province, we believe the following matters are worth noting.

1. Since temperatures during the growing season for late rice tend to go from high to low, planning should be for an early production season rather than for a late one. In recent years, some places had no grain at all as a result of overly late planting of their late crop. There are numerous reasons for delays in the production season that result in a decline in output over a wide area, but one very important reason is people's insufficient understanding of the climate. Since the decade of the 1970's, some aspects of climate in our province have clearly

changed. One is that spring warmth comes later and the period of overcast and rain is longer. The frequency of "reversed spring cold" has increased (an average of once every 2 years). A second is early autumn coldness with heavy cold damage. Statistics show that during the 1970's the "cold dew wind" appeared an average 6 days earlier than in the 1950's, and 2 days earlier than during the 1960's. Because the warmth of spring comes late and the coldness of autumn comes early, the safe period for growing two crops of rice is, in fact, shortened by as much as 20 days. Unless people give attention to this new situation, and continue instead to arrange production on the basis of old habits, they will frequently come to grief. We should diligently absorb this lesson and give close attention to the production seasons so as to benefit from bumper harvests.

2. Recognition that the appearance of the "cold dew wind" is both seasonal and sudden, with emphasis on avoiding it, backed up by combatting it. Even though the "cold dew wind's" appearance is seasonal, we have the capability of acting to avoid it. On the basis of numerous years of statistical data about the appearance of the "cold dew wind," the period of safety for full heading of the late rice crop is usually between 20 and 25 September in the northern part of the province. In the central part of the province, it is from 10 to 15 October; and in the southern part of the province, it is from 15 to 20 October. For xian varieties of rice, a bumper harvest can be assured most years if the heading and flowering of the late rice crop is planned according to the aforesaid dates. For geng varieties of rice, the safe period for full heading may be delayed by several days. But the appearance of the "cold dew wind" also has an aspect of suddenness, and there can be a great variation from one year to another in whether it arrives early or late, and is strong or weak. Once it happens, then active measures must be taken to combat it to reduce damage as much as possible.

3. Inasmuch as production of the late rice crop in our province faces threats from both typhoons and the "cold dew wind," different counter measures must be taken in different prefectures. In short, "avoidance of cold" is paramount in the northern part of the province, while in coastal prefectures in the south, "avoidance of typhoons" is paramount. In the central prefectures, avoidance of cold and defense against typhoons must both be given attention. During the last half of the year, the laws governing the incidence of typhoon activities shows a decline from many to few, and the point at which they reach land shifts gradually from north to south. In the case of the "cold dew wind," however, it appears first in the north and later in the south, and it is more severe in the north than in the south. So, during the period of growth of the late rice crop in the northern prefectures of our province, there is virtually no threat from typhoons. Cold damage is the main conflict, and the avoidance of coldness is paramount. During recent years, Zhaoguan Prefecture has actively developed hybrid rice, planting mostly early ripening or sitting autumn varieties. These are good ways of paying careful attention to the seasons and taking the initiative in avoiding coldness. The southern part of our province is the place where

heat is most abundant and the speed of decline in temperature during autumn is fairly slow. On the other hand opportunities for typhoon attacks are more numerous. Wind damage and the torrefactive rains that accompany the winds not only damage the paddy rice, but carry in their wake widespread outbreaks of bacterial blight. Relatively speaking, in southern prefectures, avoidance of typhoons is more important than the prevention of cold. Therefore, provided no cold damage during the later stages of the late rice crop can be assured, a late production season is more suitable than an early one. In the selection of varieties, early ripening late rice varieties that are typically resistant to lodging and strongly resistant to disease are the ones to be chosen. The central prefectures, our province's most important commodity grain bases, are subject to both "cold damage" and the threat of typhoons. Since the seasonality of "cold damage" is strong, and the suddenness of typhoons great, in making seasonal plans, avoidance of cold is paramount. In the matching of varieties for sequential seasonal growth, in addition to selecting superior varieties with strong wind resistance, attention should also be given not to select one and only one variety so as to assure that in case of multiple disasters, the mutually supporting characteristics of varieties may be brought into play, and high yields obtained during stable times.

In our province sunlight conditions during the period of late rice crop production are better than during the period of early crop growth. Additionally the difference between daytime and nighttime temperatures gradually increases, which is exceptionally beneficial to the accumulation of material in the rice stalks. If only we conscientiously give strict attention to the seasons and avoid, insofar as possible, the disturbance and destruction of damaging weather, we can increase the utilization rate for luminous energy and realize consistently high yields.

MANAGEMENT IN AGRICULTURAL RESEARCH IMPROVED

Guangzhou NANFANG RIBAO in Chinese 20 May 80 p 2

[Article by Zhou Xun (0719 6598): "Guangdong Improves Management in Agricultural Research"]

[Text] Guangdong Provincial Academy of Agriculture this year adopted the method of signing contracts for some key research projects to provide support of manpower, materials and money to encourage positiveness in scientists and researchers for their work.

The Provincial Academy of Agriculture has 10 research institutes and they take on 80-90 projects each year. In the past, research expenses and equipment had been shared and the projects that could have been completed within a short time were delayed because there was no way to concentrate the forces to tackle them, while those fuzzy projects that were impossible to produce fruits for a long time to come were given research expenses year after year.

In order that the limited manpower and materials can be concentrated on the essentials, the leaders of the Academy of Agriculture most recently decided to select a group of research projects to experiment with the method of signing contracts between the academy and the research institute. Projects must meet the following conditions to rate contracts: First it must be important for current agricultural production or scientific research in the province; second the institute must have a relatively good foundation for its study; third the institute must be able to guarantee results or important progress within a short period of time (2-3 years). Aside from expenses, the academy will also give guaranteed preference to the projects that are under contract.

This decision has been popularly welcomed by the scientists and researchers. Requests for 21 projects have been proposed to the academy. The rice specialist Chen Weiqin [7115 3555 2953] and veterinary medicine specialist Feng Guangren [7456 1684 0088] and other high ranking researchers have all personally organized their staff to draft the plans. The scientific committee of the Academy of Agriculture has called an extended conference

to examine the proposed projects. The project manager was also asked to read the project plan and to answer questions. Finally, 12 projects were selected for contracts by a democratic process. These projects are all key items urgently needed for current agricultural production of the province, including "Selective Breeding of New Rice Varieties and Research on New Breeding Methods," "General Survey of Guangdong Wild Rice and Its Investigation and Research," "Selective Breeding of Orange Trees and Demonstration of Dwarfism, Dense Planting, Early Fruiting and High and Stable Yield Culture," "Selective Breeding of New Breeds of High and Stable Yield Peanuts," and "Research Study on Pests and Pest Resistance of Rice Breeds," etc.

6108

CSG: 6007

SUCCESSSES IN HOG RAISING, FEEDING REPORTED

Professional Families

Guangzhou NANFANG RIBAO in Chinese 26 Apr 80 p 2

[Article by Yin Yangxiu [3009 2254 0208] and Nie Zhenguang [5119 2182 0342]: "Professional Hog Raising Has Many Advantages; a Survey of the Longgangling Production Team of Boluo County"]

[Text] Editor's Note: What forms of production should the present farm village production team use that would benefit the development of collective hog raising? The Longgangling Production Team of Boluo County implemented professional hog raising on a contract basis under the premise of unified management. This has provided us with a very good experience.

Contracting professional people who specialize in hog raising to raise hogs collectively can combine the collective benefits and the commune's personal benefits well, fully utilize manpower, material resources, raise many hogs, raise good hogs, keep the cost low, and increase the profits. If many people in one production team specialize in raising hogs, it would be equivalent to having a collective hogpen. The individual commune members, especially some peasant families strapped by economic difficulties, can also increase their income by contracting to raise hogs. Therefore, this method is beneficial to both the collective and the commune members.

Of course, the situation in each locality is different. Determining which method is good should be based on the actual situation. One must not do it in "one blow." In some places, hogs are raised by professional teams, or private concerns raise publicly owned hogs. These methods have proven to yield good results through practice and must be firmly established and continuously perfected.

At present, there are three ways of raising hogs collectively in our province's farm villages: hog raising by professional teams, publicly owned hogs raised by private concerns, and hog raising by professional families. These three ways each have their own characteristics. Viewing the practices of the Longgangling production team of the Longhai Commune in Buluo County, there are many benefits in having professional families raise hogs.

'Stone Hogs' Become Fat Hogs

The Longgangling collective hog farm originally was operated by professional hog raising teams. Because of poor management, the percentage of hogs ready for market was low and there were many "stone hogs" that could not be fattened. In March of last year, the production team distributed the 58 hogs of the farm to 7 commune families for raising on contract, and the responsibility system of fixed tasks, fixed costs, fixed feed, fixed salary, and fixed reward and punishment was implemented. This method tied the results of hog raising closely to the economic benefits of the professional hog raising family. Thus the activities of the professional family was mobilized. They not only fed the hogs regularly, mixed the feed properly, cleaned the pigpens in a timely manner, and implemented public health and disease prevention measures well, but also used the feed rationed by the team and added their own refined feed to feed the hogs. In this way, the hogs grew well and the percentage of hogs ready for market was greatly raised. Of the 58 hogs, half were originally "stone hogs" that had not been able to be fattened for 2 years. After they were distributed to the professional families for raising under contract, they all became big fat pigs ready for market in less than a year.

Not a 'Losing Business' Anymore

In the past, collective hog raising was not managed well. Investments were large, costs were high, and income was small. In 1978, the hog farm spent a total of 7,336 yuan, not including green feed and salaries for workers. Revenues were 6,346 yuan, a deficit of 990 yuan. Commune members said collective hog raising was a "losing business." After the method of contracting professional families to raise hogs was implemented, the team regulated cost and expenses. The professional families considered everything in terms of economic benefits. Many ways were used to save expenses and actually turn losses into profits. The 7 professional families spent a total of 3,115 yuan last year. Their revenue from hog raising totaled 4,167 yuan, showing a profit of over 1,000 yuan. At the same time, the professional families also sold to the collective 231,000 jin of fat hogs (an average of 33,000 jin per family). This has provided a large amount of organic fertilizer for agricultural production.

Hog Raising Families Also Benefited

Of the seven families in the team of professional hog raising families, six had only one or two workers, and the responsibilities of taking care of the children and the family chores were great. In the past, the

owned hogs raised by private concerns, and hog raising by professional laborers were unable to show up regularly for work. After they started to raise hogs on a professional basis, they could manage their time for hog raising, taking care of the children, and doing family chores. They changed from part-time laborers to full-time laborers. The husband of female commune member Huang Jianxin [7806 1696 2450] works at the moving station of the commune. She takes care of one 3-year-old and one 6-year-old at home. Two years ago she seldom participated in team labor. Last year it was arranged for her to raise hogs. Besides contracting to raise 10 hogs of the team, she also raised 27 privately owned female hogs, piglets, and hogs for slaughter. Her revenue reached 1,420 yuan. In addition, she submitted to the collective 175 yuan more from earnings on the hogs and received a reward of 400 yuan for raising hogs. Her annual income totaled 2,395 yuan. After deducting extra expenses for buying refined feed, her net income reached 1,920 yuan.

Mixing Feed

Guangzhou NANFANG RIBAO in Chinese 26 Apr 80 p 2

[Article by Hong Guang [3163 0342] and Qing Jing [3237 6975]: "Formula for Mixing Feed in Scientific Hog Raising"]

[Text] Editor's Note: After this paper published a report on 25 March on scientific hog raising by 30 hog raising units in Gaozhou and the hog farm of the Chengyue Brigade of Suixi County, many readers wrote to ask the paper to publish their own experiences. Published here are two formulas for mixing feed for pigs. They can serve as reference. Because the types of pigs raised in various localities are different, the source of feed also differs, and in selecting these formulas the actual circumstances should be taken into consideration for versatile utilization.

Pigs are animals with simple stomachs, and they basically cannot digest and absorb fiber. Based on this physiological characteristic of the pig, emphasis on coarse feed should be changed to emphasis on fine feed. According to the need of pigs for the six nutrients of protein, fat, carbohydrates, sugar, vitamins, and minerals in order to grow fleshy and fat, single feed should be changed to mixed feed. To take advantage of pigs' liking for raw feed, cooked feed should be changed to soaked feed.

1. Recipe of Hog Farm of Chengyue Brigade of Suixi County

Feeding for the early, middle and late growth periods: corn 54,63,65 (percentages of total amount of feed, and the same in the following);

corn meal 20,10,11; wheat husk 5,15,15; peanut bran 10,6,5; fish meal 1,5,3; an addition of 4 liang of edible salt to every 100 jin of the above mixture and half a jin of growth stimulants. Experimental raising of 8 head of long and white hybrid hogs for 84 days showed the hogs could be fattened from 45.1 jin to 181.6 jin, an average daily increase of 1.63 jin. Each head consumed 438 jin of feed, a consumption of 3.2 jin of feed for every jin of weight increase on the average.

2. Formula of Veterinary Station at the Gaoshou Divide

Feed for the early, middle, and late growth periods are: peanut bran 10,6,5; fish meal 8,6,5; corn 40,40,31; corn meal 22,20,20; wheat husk 8,8,8; cassava meal 12,20,22; after mixing, 1 jin of burnt husk is added to every jin of mixture, and 1 jin of growth hormone is added to every 100 jin of mixture. An experiment of raising 9 head of long and white hybrid hogs for 118 days showed the hogs could be fattened from 38.9 to 204.28 jin, an average daily increase of 1.4 jin. Each head consumed 573 jin of feed, a consumption of 3.46 of feed for every jin of increase in weight on the average.

In using these [formulas], one should remember: 1) Divide the fattening and growing periods. The early period refers to the period from weaning to 70 jin in weight. The middle period refers to the period from 70 jin to 120 jin in weight. 2) Daily amount of feed: The amount of feed during the early, middle and late periods of growth constitutes 5.5 percent and 4.5 percent of the body weight of the pig. The mixed feed should be mixed with water 2 to 2.5 times (in volume) and fed as a mush.

9296

CSO: 4007

DEVELOPMENT OF RURAL MANAGERS, ADMINISTRATORS STRESSED

Guangzhou NANFANG RIBAO in Chinese 12 May 80 p 1

[Article by He Zhenlyu [0149 2182 2464] and Chen Riwen [7115 2480 2429]:
"We Must Stress the Development of Rural Managers and Administrators"]

[Text] Most recently, we paid a visit to Xinxing County and learned about the current problems of rural management that are worthy of attention.

First of all, there is the reduction in the number of managers. During the period of collectivization in Xinxing County, there were more than 90 cadres whose jobs were management. By the eve of the Cultural Revolution there remained more than 70 cadres in the management of the ranks of the county and the communes, 14 cadres in the county department of rural village management and 3 to 4 cadres for each commune. Now the county rural department has only 9 persons, and each commune has one person specializing in management. The total county has 30 persons specializing in operational management.

Secondly, the team is not stable. The county rural department reflects that they called four management conferences last year and the delegates sent by the communes all around the county were different each time--four changes in a single year. Some management cadres of some communes were transferred and there was not time to find replacements. Accountants in brigades and production teams are not stable positions either, especially production team accountants. A large number is replaced every year.

Thirdly, [the management] is not familiar with their work. Among the 16 county management cadres, 7 are not familiar with their business. The county has 186 brigade accountants and 57 of them are not familiar with their work. The county has a total of 1,939 production team accountants, and 785 of these are not familiar with their work.

Aside from the interference and destruction of the extreme leftists Lin Biao and the "gang of four," there is another important reason for the appearance of these problems. The leaders have deficient understanding of the importance of the work of business management. That is the reason.

The Shaoqing District Planning Committee provided an increase of 15 cadres in the management work of Xinxing County last February but after repeated negotiations carried out by the county rural department with related county leaders and departments this decision was not carried out by the later part of April. Among this year's newly selected production team accountants of one commune, not a few of them do not know how to keep books. Related departments of the county have suggested to the commune party committee to organize a training class and have expressed the willingness to provide the funds, but by the middle of April, the commune party committee had not made the decision concerning the cadres who are to take charge of the class.

With the reconstruction of agricultural technology and the development of joint enterprise of agriculture and industry, there is an increasing urgency to strengthen business management of the rural villages. When there is no skilled business management team, it is not possible to carry out the various economic policies of the party in the rural villages, to operate the collective economy, or to realize agricultural modernization. For this reason, the rural comrades here earnestly request the related leaders and departments to adopt measures to strengthen the rural business management teams. They suggest:

1. The various leaders and agencies should regard the construction of business teams as important to make the management organization of the people's communes healthy as quickly as possible. Each commune should be provided with three to four specialized cadres. Some experienced managers should be quickly allowed to return to their outfits and managers should not be transferred randomly. A relative stability should be maintained.
2. The job of training should be carried out well to improve the level of the business skills of the managers. The related provincial and district departments should train teachers for the counties and communes. Among the currently available cadres specializing in business management, a team of accountants who understand agricultural economics must be cultivated to build a foundation for across the board improvement of the level of business management.
3. A normal work system should be established to guarantee that five-sixths of the time of the business management cadres is devoted to their jobs.
4. The rural business management cadres should be given political, ideological and living considerations, based upon the principle of praises and awards to improve the welfare and rewards, step by step, of those managers who are honest, thrifty and public-minded.

6168

CSO: 4007

BRIEFS

TRAINING FOR AGRICULTURAL CADRES--With regard to accelerating the training of cadres of agricultural technology, aside from restoring the provincial school of agricultural cadres, Guangdong Province also established five district schools of agricultural cadres, and cadres training classes in six districts as well. In Fushan District, where the training progressed relatively faster, schools of agricultural technology have been established in all 13 counties (cities) and some communes of the district to form a preliminary training and educational network for agricultural technology. The job of the agricultural cadre schools and training classes is to cultivate a team of agricultural cadres who will insist upon taking the socialist road and who have specialized knowledge. Since last year, the two grades of provincial and district schools have trained a total of over 700 cadres as agricultural leaders and managers of various ranks, as well as over 3,700 agricultural researchers of various categories. The training classes below the county level have also gradually been launched. After learning, the students obtain the basic knowledge of agricultural technology necessary for commanding production, so that when they return to their jobs they may produce delightful achievements. For example, after the class ended in Suiqi County, the students, upon returning, immediately adopted measures to strengthen the agricultural science teams of the communes and brigades to cause the three grades of organizations of agricultural science in the county to exercise their true function. The party committees of various ranks look upon the agricultural cadre school as a basic item for realizing agricultural modernization and earnestly help resolve such problems as housing, teachers' salaries, instruction material, etc. The Fushan District Committee allotted 400,000 yuan for the construction of the agricultural cadre school training building, and districts of Zhanjiang, Huiyang, etc., have also dispensed funds for basic construction and training expenses. [Article by Xu Wenyuan [1776 2429 0337] [Text] [Guangzhou NANFANG RIBAO in Chinese 15 May 80 p 1] 6168]

LICHI HARVEST IN GAOZHOU COUNTY--A bumper harvest of lichi [also spelled as lichee, a popular South China fruit] was reported in Gaozhou County, a major lichi producing area of Guangdong. As of the end of May, the yield of this county's 30,000 mu of lichi orchards was over 8 times that of the same period of last year, and the amount turned over to the state for export was over 13 times that of the comparable period. [Beijing RENMIN RIBAO in Chinese 28 Jun 80 p 2]

BRIEFS

COMMERCIAL FARM PRODUCT BASES--CHINA NEWS AGENCY, Nanning, 30 Apr--The Guangxi-Zhuang Autonomous Region has readjusted the pattern of its agriculture after taking account of the natural conditions there and the sequence of grain, sugar, and oils (oils from woody plants), and has established a large number of commodity production bases for foodstuffs, forestry, livestock raising, sideline products, and fish. In 1977, Guangxi set up a group of commodity and raw material bases for sugarcane, and in 1978 raw sugarcane production rose from the 50 million dan of the previous several years to more than 70 million dan. During the past 2 years, annual production of sugar in Guangxi has exceeded 380,000 tons. Last year, edible sugar transferred to the state amounted to 260,000 tons. In 1979, the autonomous region decided on 28 key counties for the growing of rape, 33 key counties for the raising of beef, and 7 key counties for the forestry industry. Early this year it again decided that 138 communes should concentrate their forces to produce commodity grain, and it decided that in 28 mountainous counties emphasis would be given to the development of forestry, livestock raising, and special native products. Investigation, study, and formulation of policies and measures are underway at the present time in preparation for the further establishment of a group of bases for the raising of ocean products, and of bases for production of sideline food products in the suburbs of cities. Thus, in every region, production bases are being established that are suited to the different natural characteristics of mountain regions, hills, plains, and the seacoast. These should quite quickly raise worker productivity and the commodity rate, and should gradually lead to the development of various kinds of regionalized and specialized agricultural commodity production bases. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 2 May 80 p 5] 9432

CSO: 4007

BRIEFS

WHEAT HARVESTED BY MACHINES--With more than 7,000 small harvesters operating this summer, Shijiazhuang Prefecture of Hebei harvested 2 million mu or 40 percent of its wheat crop by machines this year. This is twice as much as last year and is the result of better harvesters. [Beijing RENMIN RIBAO in Chinese 22 Jun 80 p 2]

CSO: 4007

BRIEFS

TELEPHONE CONFERENCE--The Heilongjiang Provincial CCP Committee and the provincial people's government held a telephone conference 17 July calling on all localities to do summer hoeing work well. The conference called for efforts to apply additional fertilizer to poorly developed seedling lands and to combat possible disasters such as floods, hailstorms and insect pests. The conference noted that wheat harvesting would be carried out during the rainy season. Therefore, all localities should make preparations for harvesting by manpower and machinery. Key wheat producing areas and state farms should organize the PLA units and schools to help during wheat harvesting period. All trades and professions should also help poor teams and disaster stricken areas harvest by providing manpower, transportation and material resources. [SK211326 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 17 Jul 80 SK]

WASTELANDS UNDER CULTIVATION--Heilongjiang Province enlarged 821,000 mu of arable lands by 15 July, of which 461,000 mu of wastelands were opened up and brought under cultivation this spring. If these new arable lands remain free from disasters through autumn harvesting period, about 80 million jin of grain can be harvested. Heilongjiang Province has established 86 mechanized land reclamation spots in 1979 and 69 in 1980; most were established in wastelands in Hejiang, Haihe and Mudanjiang prefectures. Minor ones were set up in Nenjiang, Yichun and Songhuajiang areas. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 17 Jul 80 SK]

RIVER RISE--Huma County, Heilongjiang Province, has suffered high temperatures and heavy rainfall since this summer, causing the water levels of the county's rivers to rise 1 meter higher than in previous corresponding periods. In early June, precipitation increased 1.2 times over that in past years. About 3,000 mu of river valley lands were flooded. The Huma County CCP and Revolutionary Committees adopted emergency measures to mobilize commune members and the masses to repair river dykes on a crash basis and succeeded in avoiding heavy damages. This county is doing in flood and waterlogging prevention work, repairing some 4,000 meters of river dykes and dams. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 17 Jul 80 SK]

IRRIGATION PROJECTS--Heilongjiang Province has achieved new progress in irrigating dry farmlands. As of the end of June, the province had irrigated 5.5 million mu of dry farmland, an increase of 430,000 mu over the total irrigated area of last year. Most of the irrigation work was done by motor-pumped wells. [SK200642 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 14 Jul 80 SK]

LAND RECLAMATION--Communes and brigades in Heilongjiang have reclaimed some wasteland this year to expand cultivated land. According to statistics released 15 July, they have reclaimed 821,000 mu of land, of which 461,000 mu had been planted during the spring. If there are no serious natural disasters until autumn, the newly reclaimed land can be expected to yield 80 million jin of grains. [SK200642 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 17 Jul 80 SK]

CSO: 4007

HENAN

BRIEFS

NATURAL DISASTERS--A Henan Radio commentary revealed that "slight heat" [7 July] has passed in Henan and the province is now entering "great heat" [23 July]. It pointed out the flood season arrived early this year. The province had already experienced three heavy rains so far. There are dangerous signs in some rivers. The people in the province must become urgently mobilized, fight the floods and persist in resisting the disasters to reap a bumper harvest. There are more natural disasters in summer and autumn due to influence of weather conditions. Hailstone and insect pests also usually occur during this period. In some areas, the people only pay attention to resisting drought and neglect flood prevention. It is necessary to grasp both drought resistance, flood prevention simultaneously. [HK220234 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 8 Jul 80 HK]

CSO: 4007

BRIEFS

RICE LEAF-ROLLERS--The Hubei crop insect pests forecasting station reported the good growth of early and mid-season rice in Hubei this year. However, due to recent weather conditions, the second-generation of leaf-rollers are beginning to occur in Hubei. In some areas, the appearance of these insects is 10 times higher than last year. This will threaten the early and mid-season rice. The station advised these areas to mix a solution of 50 percent malathion with 1,500 jin of water to spray crops. Another method is to mix 3 percent 666 dust with 1 parathion and "1605" and apply 3 jin to each mu of farmland in the morning when there is dew. These methods are 80 to 90 percent successful. [HK220234 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 12 Jul 80 HK]

FIRST FLOOD CREST--Hubei Province has overcome this year's first flood crest. Since the beginning of this year's flooding season, precipitation throughout the province has been greater than last year. Since June, it has rained heavily four times, resulting in a rapid rise in the water level in rivers. All prefectures, municipalities and counties have organized forces to inspect embankments, dams, reservoirs and pumping stations and repair them if necessary. All departments throughout the province have actively helped in this work. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 8 Jul 80 HK]

FLOOD PREVENTION--Wuhan, 12 Jul--Due to excessive rain, the water level of Changjing River in Hubei has been rising since 9 July. All localities near the river have stepped up flood prevention work, and presently some 20,000 to 30,000 people are engaged in dike inspection and other precautionary work. [OW121223 Beijing XINHUA Domestic Service in Chinese 1251 GMT 12 Jul 80 OW]

CSO: 4007

JIANGSU

BRIEFS

ANTIFLOOD, ANTIDROUGHT READINESS--The Jiangsu provincial flood and drought prevention command and various prefectures and counties have made available large quantities of materials and equipment in preparation against possible floods and droughts. As of 12 July, more than 100,000 tons of materials had been delivered to various places threatened by floods. A decision has been made to provide an additional 60,000 hp of drainage equipment for areas in Xuzhou, Huaiyin and Yancheng prefectures and the Lixiahe area. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 14 Jul 80 OW]

CSO: 4007

JAPANESE RICE CULTIVATION METHODS TRIED OUT IN JILIN

Beijing GUANGMING RIBAO in Chinese 9 Jun 80 p 2

[Article: "Jilin Province Benefits from Japanese Rice Growing Experiences"]

[Text] In order to gain experiences with consistently high yields of paddy rice in the northern part of our country, Jilin Province used Japanese rice planting methods this year at numerous demonstration points in five counties. Now seedling propagation and trans-plantation has been completed at each point, and the rice shoots are growing well.

Across the broad reaches of our country's northland, the frost-free period is short. Past experience with the growing of rice frequently resulted in inability to produce consistently high yields because of damage done by low temperatures or early frost at the time of ripening when seedling propagation or transplanting had been delayed. In order to solve this problem, the Chinese Agricultural Society last year invited Japanese at the Japan-China Northeast Rice Crop Technical Exchange Delegation to test grow rice using modern Japanese farming methods at the 150 mu test site of the Paddy Rice Institute of the Jilin Academy of Agriculture. The Japanese experts chose an early ripening high yield superior variety for which they grew seedlings using spare seedlings for sturdy seedling growth, early transplanting of seedlings, and top dressings of fertilizer at proper times. Seedling transplanting and harvesting of the crop employed machinery. Transplanting of seedling was done between 15 and 20 days earlier than usual, and harvesting took place half a month earlier than usual. In this way, danger of early frost was avoided, and average yields from the 150 mu of paddy rice amounted to 1,067 jin per mu, breaking the record for high yields of paddy rice in Jilin Province and providing experience about the way to get high yields in frigid northern areas.

This year, Jilin Province decided to run further experiments based on the aforementioned Japanese experience, this time on more than 20,000 mu in the five counties of Huaide, Yongji, Hailong, Yanji, and Shulan, and they asked the Japanese rice experts to provide technical guidance. As of the end of May, the more than 100 production brigades in these five counties had undertaken indoor propagation of seedlings and their transplantation using machines using the Japanese methods. Now in the wide stretch of paddy fields the rice shoots are thriving. The leadership cadres and the technicians from the five counties are now in process of summarizing the farming experiences of the period just past to formulate first stage field management techniques in order to strive for the creation of high yield rice fields over a wide area.

BRIEFS

HAILSTORMS REPORTED--Between 5 July and 10 July, 23 communes in 9 counties in Liaoning Province, including Zhangwu, Fuxin, Benxi and Jin counties in the west and Kangping and Changtu in the north, were hit by hailstorms. According to statistics, some 350,000 mu of land suffered damages, of which 36,000 mu of farm crops needed replanting. (Zhu Xinye), first secretary of the Fuxin Municipal CCP Committee, led work groups to afflicted areas to study and devise measures for relief work. This municipality also allocated 20,000 yuan in relief funds, 800 tons of chemical fertilizer and 130,000 jin of crop seeds to support disaster afflicted areas. Kangping County was one of the most heavily damaged areas. This county's grain department allocated 500 tons of chemical fertilizer and 30,000 jin of crop seeds to support and relieve the people in the mountainous areas. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 19 Jul 80 SK]

COMMUNE-RUN ENTERPRISES--The well-developed commune and brigade-run enterprises throughout Liaoning Province have accumulated funds for the modernization of agriculture. In 1979 profits made by such enterprises totaled 500 million yuan, and among them some 150 million yuan were directly invested in developing agriculture. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 20 Jul 80 SK]

CSO: 4007

ACADEMIC DISCUSSION ON ANIMAL HUSBANDRY HELD

SK201202 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT
18 Jul 80

[Excerpts] According to our sources, an academic discussion on the modernization of agriculture, animal husbandry and forestry was held in early July in Nei Monggol. Participating were experts, professors and scientific and technical workers engaged in animal husbandry in various localities of the region. They suggested that in order to implement the principle of taking animal husbandry as the key link of production and to develop the strong point of the grasslands in our region, efforts must be made to reform the irrational production plans of animal husbandry and do a good job in improving livestock strain along with the zoning work.

The experts noted: There are five types of pasturelands in Nei Monggol region. They are, from east to west: meadowlands, typical grasslands, deserts, semideserts and wastelands. Since natural conditions vary in the five pasturelands, the forage crops produced by them are also different in strain. [words indistinct], nutrition and chemical composition. Different forages are used to raise different animals. Scientific research has proved that forage crops produced by meadowlands are low in animal protein and are suitable to feed milk or beef producing cattle. Forage crops produced by deserts have a high concentration of animal protein and are suitable to feed sheep and strong horses. Proceeding from the realities of the various pasturelands in Nei Monggol region, the meadowlands in the eastern area are suitable for raising milk or beef producing cattle or cattle that can produce both. The typical grasslands and deserts in the middle area are suitable for raising sheep that can produce both mutton and wool. The western area of the region, where the weather is dry and plants are mostly shrubs or undershrubs, is suitable for raising goats and camels.

Many localities have been remiss in developing animal husbandry. In judging what kind of animals they should raise, instead of taking into account specific natural conditions and the characteristics of resources, they act on the basis of assumptions. As a result, natural resources of grasslands cannot be fully exploited.

The experts also suggested that it is necessary to improve the strain of livestock, shorten the period of fattening and carry out the seasonal production of animal husbandry.

They said: In Nei Monggol region, the frost-free period is short, winter is long and about 70 percent of the total rainfall comes during summer. During summer and autumn, forage crops grow well and are of high nutritional value. In winter and spring, forage crops wither and are of low nutritional value. Therefore, in the region, livestock always grow well in summer, get fat in autumn, lose weight in winter and die in the spring.

In light of the seasonal characteristics of the grasslands in Nei Monggol region, it is imperative to carry out the seasonal production of animal husbandry, give full play to the strong point that forage crops can provide high nutritional value in summer and autumn, develop the high-yield and early-maturing strains of livestock and reduce the time needed for animals to grow fat. By so doing, we can exploit the strong points and avoid the shortcomings of the grasslands. At the same time, we can accelerate the circulation of livestock and increase animal husbandry production.

CSO: 4007

BRIEFS

MORE ANIMALS RAISED--As of the (?end) of last May, the number of animals born in Xilingol Meng, Nei Monggol, reached 1.68 million head. The survival rate was 90.6 percent, and the number of surviving young animals was some 385,000 head more than in the same period of last year. The increase was the success of the job responsibility system. [Beijing RENMIN RIBAO in Chinese 30 Jun 80 p 1]

CSO: 4007

BRIEFS

FOREST INSECT CONTROL TECHNIQUE--Forest areas in Ningxia recently employed a new forest insect control technique by which airplanes were used to spray fine mists of insecticides with extra-low chemical contents--only 4 shiliang [2 hectogramme] for each mu of forest. When applied to 165,300 mu of forest, this technique obtained an insect-killing rate of over 90 percent. This is more effective and economical than when the normal amount of chemical is used. [Beijing RENMIN RIBAO in Chinese 25 Jun 80 p 2]

CSO: 4007

DESTRUCTION OF SCIENTIFIC EXPERIMENTAL PLOTS REPORTED

Beijing GUANGMING RIBAO in Chinese 11 Jun 80 p 2

[Article by Liaocheng Prefecture Agriculture Institute, Shandong Province:
"Strongly Demand a Stop to Destruction of Scientific Experiments"]

[Text] Ever since last fall, scientific experiments of our institute have been destroyed with serious impairment to the progress of scientific research work.

On 4 and 5 November 1979, more than 30 people from the Lingjin Production Team stole every one of the cotton plants from our institute's 7.5 mu of summer-sown experimental area and superior variety propagation area, with the result that all cotton experiments had to be scrapped and there was no way for us to complete the nationwide experimental work for which we were responsible.

In fall of the same year, we set up five provincial and prefectural scientific experiments on 7.2 mu of land for the wintering over of rape. But this spring, after it had begun to green up again, it was repeatedly cut and taken away by the Lingjin Production Team from early March until mid-April. On the single evening of 14 April alone, they took one-third of the seed propagation field crop and two-thirds of the rape plants from the test fields. As a result most of the rape experiments for this year have been destroyed.

Furthermore, last fall and this spring, the roof beam, the roof purlins, the main door, the roof tiles, the electrically-operated sluices, and the electric wires from the pump house of the experimental farm were looted, making irrigation of the fields extremely difficult. More than 1000 jin of growing vegetables were also stolen last fall and this spring.

If this continues, it will be very difficult to proceed with our institute's normal research and production work. During the wheat harvest season in 1979, Comrade Song Shidang [1345 1102 1349], deputy director of our institute, sustained a cerebral concussion, as the result of a beating while he was trying to protect the wheat, and was hospitalized for more than a month. But the authorities concerned did not deal severely with the matter and, as a result, incidents of theft and destruction continue to occur. We strongly demand the local authorities severely deal with the aforesaid incidents to put a stop to the behavior that destroys scientific experiments.

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CSO: 4007

BRIEFS

BUMPER WHEAT HARVEST IN PINGDU CITY--Despite earlier droughts and low temperatures, the 1.15 million mu of wheat in Pingdu County of Shandong yielded a bumper harvest this year, with the per-mu and total yields registering a 5 percent and 10 percent increase respectively over those of last year's bumper harvest. [Jinan DAZHONG RIBAO in Chinese 7 Jul 80 p 1]

MORE BRIGADES BECOME RICH--Last year, Shandong had 47 commune production brigades with annual per capita distribution of income exceeding 300 yuan. Most of them are located in Yantai, Changwei, Qingdao, Zibo and Tai'an prefectures or cities. These brigades achieved their success by fully utilizing local natural resources, by engaging in both grain production and industrial and sideline production and by strengthening management, economic accounting and leadership. In a commentary, DAZHONG RIBAO hailed these brigades as good models for rural areas to follow to achieve prosperity quickly. [Jinan DAZHONG RIBAO in Chinese 14 Jul 80 p 1]

ZAOZHUANG SUBURBS WHEAT HARVEST--Thanks to the job responsibility system, suburban areas of Zaozhuang City reaped a bumper harvest from 1.82 million mu of wheat this year, with both per-mu and total yields surpassing those of last year. [Jinan DAZHONG RIBAO in Chinese 12 Jul 80 p 1]

JINING PREFECTURE WHEAT--Despite earlier natural disasters, Jining Prefecture of Shandong reaped a "good harvest" from its wheat crop this year. The local commune members are now delivering and selling summer grain to the state. [Jinan DAZHONG RIBAO in Chinese 14 Jul 80 p 4]

CSO: 4007

COMMENTATOR CALLS FOR DEVELOPING FISH RAISING

Shanghai JIEFANG RIBAO in Chinese 9 Jun 80 p 1

[Article by commentator: "Liberalization of Policies Needed for Development of Fish Raising"]

[Text] For the past 30 years, this city's aquatic products departments have emphasized ocean catches, and ocean fish have become the principal aquatic products supplied to the city. Quantity has increased from 3000 tons right after Liberation to the more than 190,000 tons of last year. Still, for various reasons, various kinds of ocean fish resources have been destroyed in recent years, and in the boundless Eastern Sea and Yellow Sea a general condition has taken place in which "the greater the fishing the smaller the catch, and the greater the fishing the more meager the catch." There is no longer a fishing season for the much loved big and little yellow croakers, and the trend is toward a decline in hairtails. In order to protect these kinds of fish, definite restrictions must be placed on ocean fishing, while at the same time changes should be made in aquatic product work programs. These changes have to be based on realities, and an exploitation of advantages while avoiding disadvantages. There has to be a consolidation and an increase, and breeding has to be actively developed.

This city is located at the entrance to the sea of the Yangtze River and the Qiantang River. It has more than 500 kilometers of seashore and river shore and a large amount of beaches, which annually lengthen in an easterly direction, and there are numerous areas of water surface in shallow coastal areas of the sea that virtually still remain unused for breeding purposes. The suburbs consist of a delta of the Yangtze River crisscrossed by waterways where the fresh water surface for the breeding of fish amounts to about 400,000 mu. On the water surface where fish are already being bred, a great disparity exists in the quantities of output, and a great potential remains to be exploited. In recent years, this city's aquatic products research forces have seen great development and many heartening accomplishments have been made. This city also has more than 30,000 fishermen with experience in breeding fish and catching fish. The account carried in today's newspaper about the three married couples who operated a fry farm

vividly illustrates that once the initiative of the fishermen has been aroused, there is great hope and a bright future for the development of marine and fresh water breeding endeavors. Through conscientious development of marine and fresh water breeding endeavors, not only can the amount of aquatic products supplied the city be increased and the quality of seafood improved, but it is also possible to increase the variety of aquatic products supplied, and people will be able to eat fresh fish. In the suburbs where such good natural conditions exist, an outstanding increase in fresh water fish production within 1 or 2 years, a rather great increase within 3 to 5 years, and a doubling or tripling within 10 years has to be deemed possible. Historically, the year of greatest supply of fresh water fish to the Shanghai market was 1954 when 42,000 tons were landed. As a result of a gradual annual decline in shipments of fresh water fish from elsewhere, this amount declined last year to more than 3000 tons. This, plus the too slow development of fresh water fish production from the city's suburbs, has resulted in the virtual disappearance for many years of fresh water fish in the markets, and live fish are an even greater rarity. Following the smashing of the "gang of four" and the further purging of the effects of the erroneous thinking of the pernicious ultra-leftist line of Lin Biao and the "gang of four," which was manifested in "chop everything bare to make grain the key link," and "fisheries rank fifth; it doesn't matter whether they exist or not," the people are making new efforts to develop fresh water fish production in the suburbs. Last year they produced 14,000 tons to break a fluctuating situation that has existed for 20 years.

Summarization of the lessons of history shows cognitive problems and scientific problems, but most importantly policy problems. Growth in agriculture depends on correct policies, and growth of the fishing industry likewise depends on correct policies. For the development of fish raising, there has to be a liberalization of policies. This is the "ox's nose" for the development of fish breeding, and the vigorous development of fish breeding requires "leading" by this "ox's nose."

The liberalization of policies should advocate that "benefits go to the breeder," by which is meant that there shall be no change in the right of use and the right to carry on shall be strengthened for those already using any water surface to raise fish. Those units making use of and managing a water surface shall use all manner of means to raise a sufficient number of fish, raise them well, and steadily increase the quantity of per unit yields. For water surfaces capable of growing fish that are not yet being used for that purpose, collective management or collective unified management should be actively encouraged, and for small water surfaces, a system of fixing output quotas for each household and of responsibility for each individual may be instituted. It is regrettable that even now there are tens of thousands of mu of water surface capable of producing fish that are lying fallow in some counties. In the case of meandering streams within the bailiwick of agricultural brigades, the brigades should be aroused to make use of them to solve the problem of getting fish for the farmers to eat. Any excess may be disposed of in any way deemed appropriate. In the case of meandering stream water surfaces where no fish are being grown and for which no plans exist to grow

fish, permission should be given so that a household experienced in raising fish can operate it or it should be turned over to several households for joint operation with the production being distributed according to the wishes of the operators and without the interference of others. Only by mustering initiative from all quarters in this way can full use be made of water surfaces; and only by making full use of the water surfaces can the scientific raising of fish and the fresh water fish breeding industry be developed quickly. The policy of "benefits to the breeder" is entirely the opposite of the former policy of "open water surfaces." The former is for the full use of the water surfaces and the active development of breeding endeavors; the latter is "unmanaged laissez-faire allowing complete stripping."

In some water surface where fish are being raised, when conflicts have arisen with livestock raising, water conservancy, and navigation, the leaders concerned have had to do unified planning with due consideration for all concerned and make reasonable arrangements. There can be no more resort to erroneous methods of "forcing of fish." Pollution problems have to be quickly solved, and plants that are still seriously polluting fish breeding water surfaces can be required by fish breeding units to pay damages in accordance with pertinent regulations contained in the Shanghai Municipal Aquatic Products Bureau's "Announcement On Strengthening of Aquatic Products Resources Breeding and Protection," which was passed by the municipal People's Government. Those polluting units who refuse to mend their ways despite repeated admonitions and continue to endanger the raising of fish shall have their principal officers in charge held responsible before the law.

Fish breeding units should have a spirit of self reliance in enlarging their feeding resources, and food units should also lend support to increase, insofar as possible, the supply of food for the fish. Currently, the level of supply of food for fish is much lower than the supply for pigs and poultry; it should be raised.

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CSO: 4007

SHANGHAI

BRIEFS

PORK SALE--Since mid-July, about 20,000 live pigs have been arriving at Shanghai daily from Zhejiang, Jiangsu and Shanghai suburbs. To boost the sale of pork, the municipal departments concerned have decided to reduce pork prices by an average of 30 percent, effective 25 June. The Second Municipal Commercial Bureau of Shanghai also has issued a notice calling on all food serving units to lower prices on food made from pork. [Shanghai WEN HUI BAO in Chinese 25 Jun 80 p 2]

CSO: 4007

BRIEFS

SPRING DROUGHTS--Spring droughts were reported in Shehong, Yenting and Santai counties of Mianyang Prefecture in Sichuan. The droughts have caused many problems in spring sowing, and the local peasants are taking various measures to solve them. [Chengdu SICHUAN RIBAO in Chinese 2 May 80 p 1]

CROPPING PLANS ADJUSTED--Since last autumn various areas in Sichuan have adjusted their cropping plans, reducing their wheat acreage and expanding their rice and rape acreages. As of now, plans for planting and transplanting some 44 million mu of early and intermediate rice crops were completed, and this figure is 3 million mu more than last year. The success of Sichuan's grain production plan for this year, therefore, depends on the autumn-ripened crops, mainly the rice crop. The provincial party committee and people's government have called on the local peasants to manage well the autumn-ripened crops and to use the autumn harvest to augment the summer harvest in order to increase the annual grain output. [Beijing RENMIN RIBAO in Chinese 27 Jun 80 p 2]

CSO: 4007

XINJIANG

BRIEFS

LONG-FIBER COTTON PRODUCTION--The 630,000 mu of long-fiber cotton in Tarim and Turpan basins of Xinjiang produce more than 300,000 tan of cotton annually. These acreage and yield make up over 90 percent of the total national acreage and yield of long-fiber cotton. However, the quality of cotton is unstable and the per-mu yield is low. More scientific research, better cotton disease control and cultivation technique, and good coordination between producers and procurement agencies are needed to improve quality and yield. [Beijing GUANGMING RIBAO in Chinese 18 Jun 80 p 2]

CSO: 4007

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TITLE: "Studies on the Male-Sterile Material '2-2-3' Controlled by a Dominant Gene of Wheat and Its Use in Breeding"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 1-8

TEXT OF ENGLISH ABSTRACT: One male-sterile plant of wheat "2-2-3" was found in a common wheat hybrid F_6 population in Shanxi Province in 1972, and its inheritance of fertility has been studied since 1974. The F_1 and the succeeding generations of this male-sterile plant crossed with any fertile parent showed 1:1 segregation of male-sterile and male-fertile plants, and no intermediate type was noted. This segregation ratio was rather stable under different

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 1-8]

environments. All the male-fertile offspring were normal. The stamen of this male-sterile plant was the "non pollen type."

Through the analysis of the genetic material data, it was learned that male-sterile "2-2-3" was controlled by a dominant gene in 1977. This material was assigned the "G" type.

This paper also discusses how to use this male-sterile material in wheat breeding.

* GUO Wenyi [6753 2429 5030], Shuixiu Commune Seed Station, Taigu County, and GUO Wenzao [6753 2429 5399], Scientific Research Team, Guojiabao Production Brigade, also took part in the study.

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TITLE: "The Classification of the Different Types of Local Winter Wheat Varieties in North China"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, May 80 pp 9-14

TEXT OF ENGLISH ABSTRACT: Most of China's winter wheat is grown in the north. Through long years of breeding and selection, an area of a great diversity of winter wheat varieties with different types of biological and morphological characteristics has been established. For the convenience of utilization and study of the numerous local winter wheat varieties, the classification method of combining morphology with ecology is used to divide the winter-wheat-growing regions of north China into four ecological zones, and the local wheat varieties of each zone into three classes and 18 types. In this way it is easy to study the main characteristics of the different types of wheat in this area, and their relations to the local natural conditions of the four ecological zones.

* BU Mideu [0592 1970 5478] guided the study.

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ORG: None

TITLE: "Factors in Wheat Varietal Tolerance to Stem Rust"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 15-23

TEXT OF ENGLISH ABSTRACT: Many components are involved in wheat varietal tolerance to stem rust infection. All tolerant wheat varieties tested in this research project showed susceptible reaction both in fields and greenhouse, either in seedlings or in adults. There was no racial difference between race 21-2 and race 34-3 in greenhouse tests, but this is not to say that these tolerant wheat varieties hold some horizontal resistance for lack of intensive study in racial tests. However, the progressive rates in the percentages of infection and severity were quite different between the susceptible and tolerant wheats. The rust infection progress of tolerant varieties was so slow that they seemed to behave as slow-rusting.

The rust-tolerant wheats usually had a longer latent period than the susceptibles. This was proved by the inoculation tests performed in the greenhouse both

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 15-23]

in the seedlings and in the adults. From the rust nurseries, it was observed that the uredial pustules appeared three or more days earlier in the susceptible wheats than in the tolerant varieties. There was, however, no racial difference in the latent period between race 21-2 and race 34-3. The latent period was a little longer in adults than in seedlings. Fewer and smaller uredia appeared in the stem rust tolerant wheats. This seems to be another character in tolerant wheats.

The elimination of epicuticular wax would hasten the rust infection and shorten the latent period. The differences were significant in the latent period when the epicuticular wax was wiped away. It was true both of race 21-2 and of race 34-3. This points out that the epicuticular wax may play a certain role in hindering and delaying the infection.

Selection of durable disease-resistant materials is desirable in plant breeding. According to the present studies, some varietal characters may be useful in the choice of varietal tolerance when the varieties are attacked by stem rust. The results indicated that there was no correlation between the stem rust endurance and either the number of spikes or the number of kernels per plant, except in the very late maturing varieties with heavy early infection. The stem rust endurance was highly correlated with thousand-kernel weight and plumpness of

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 15-23]

seeds. The correlation coefficient (r) between disease incidence and percentage of reduction of thousand-kernel weight in the milky ripe stage was 0.901 in 1963 and 0.891 in 1964 and between thousand-kernel weight and kernel plumpness was 0.986 in 1963 and 0.991 in 1964. All these r -values were highly significant. Although the thousand-kernel weight and kernel plumpness may be influenced by other environmental factors, they are useful for single plant selection as well as for plant row selection in preliminary tests. Certainly the more reliable tests for the decision of varietal tolerance to stem rust damage are the yield tests.

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TITLE: "Studies on Cross-Breeding of Japonica with Indica Rice"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 24-30

TEXT OF ENGLISH ABSTRACT: The aim of the present study is to introduce from Indica rice the genetic genes of pest-disease resistance and high yield so as to breed new varieties and explore the laws of genetic breeding in crossing Indica with Japonica. Results obtained from experiments are as follows:

1. New varieties and strains have been successfully developed, such as: Zhong Zhou No 9, Zhong Zhou No 75 and its sister line Zhong Zhou 121 and its sister line, strain 77-618 and R-line No 300.
2. The fertility can be raised by ways of selection and increased generations.
3. The strength of inheritance per thousand grain weight is higher.

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 24-30]

4. By crossing the Japonica variety from Taiwan Province with Indica rice or using the Japonica rice as maternal parent in three-way crossing or double-crossing, the fertility can thus be increased and character of its progeny be more easily stabilized.

5. New strains resistant to rice blast and rice stripe can be developed by cross breeding of the Indica and Japonica rice with Indica antigen.

* Also taking part in the study were: LIU Zhiwu [0491 1807 2976], NI Pichong [0242 0012 0394], CHEN Yinquan [7115 6892 0356], LENG Zhongzhuan [0397 0022 1413], AN Debao [1344 1795 1405], ZHANG Hongnan [1728 3163 0589] and QIAN Chengde [6929 2110 1795], all of our Institute; and HONG Lifang [3163 4539 5164] and LIU Bingquan [0491 4426 2938], both of the Crop Institute, Beijing Municipal Academy of Agricultural Sciences.

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TITLE: "The Selection of a New Wilt-Resistant and High-Yielding Cotton Variety '86-1'"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 31-36

TEXT OF ENGLISH ABSTRACT: The new wilt-resistant cotton variety "86-1" with high yield and better quality was systematically selected from the cotton strain "Shan 65-141" during 1972 to 1977. In regional experiments of cotton wilt-resistance from 1976 to 1977 throughout the country, it was shown as the best and was therefore recommended for cultivation in the wilt-infected cotton

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 31-36]

areas of the Changjiang River basin as well as in the Yellow River basin with adequate fertilizer and better irrigation conditions.

The chief economic characters of "86-1" are as follows:

1. Highly resistant to cotton wilt disease. Its control effect in seriously diseased fields may be as high as 98.7 percent and also possesses some resistance to various physiological forms of Fusarium wilt fungi in our country.
2. High yield. It increased in yield an average of 18.9 percent over check variety "Shan 401." In non-diseased fields, its yield may be 5.3 percent higher than varieties susceptible to wilt disease.
3. Better qualities. Its mean fiber length of 30.3 mm, lint of 39.3 percent, mean fiber fineness of 5631 m/g with a single fiber strength of 4.17 g, and the fiber breaking length of 23.32 kilometers.

In 1979, this new cotton variety has been planted on about 210,000 mu of land in 39 districts of 11 provinces.

* Also contributing to the present study were: CHEN Qiying [7115 0366 8751], HE Linyuan [0149 4409 6678] and JIAO Yongping [4255 3057 1627].

AUTHOR: ZHENG Guanghui [6773 0362 5478]

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TITLE: "Studies on the Control of Viability of Citrus Seeds"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese
No 2, May 80 pp 37-43

TEXT OF ENGLISH ABSTRACT: The seeds of citrus would be injured by drying and hence would deteriorate rapidly under ordinary storage conditions. Therefore, the moisture content of seeds is of utmost importance as a factor in the deterioration of their viability. It had been experimentally proved that the critical moisture content, below which the seeds would rapidly lose their viability, varies according to temperature, speed of desiccation and water situation in seeds, etc. It seems probable that the mechanism of drying damage to seeds is the mechanical detriment to their protoplasm. Specifically, protein denaturation is accompanied by water loss.

The deterioration of citrus seeds in storage under moist conditions, particularly in sealed conditions, which is attributed to the infestation with pathogens, may be prevented by treating seeds with 8-hydroquinoline sulfate salts

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 37-43]

(HQS) or antifungicides 401. The 401 is better than HQS for its safe application although the HQS is more effective in fungicide action than the 401. Moreover, pronounced effects on seeds by 401 were observed, that is, it stimulated germination and root growth in seedlings and also reincreased the vigor of seeds which had been reduced.

* Also taking part were: GE Chaming [5514 1390 2494], CHEN Qingtao [7115 1987 3447], YI Dejun [0205 1793 3182], SHEN Jun [3088 7165] and LI Shengchen [7812 4181 5256].

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TITLE: "Studies on the Percentage of Ripened Grains of Hybrid Rice"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 44-50

TEXT OF ENGLISH ABSTRACT: From 1977 to 1979, investigations on the relationship between the percentage of ripened grains (denoted by P) and the total number of spikelets per unit area (Ns) for the hybrid rice "Nanyou No 3" were conducted. The different times and amounts of fertilizer applied and different planting densities were included in the treatments. The main results obtained are summarized as follows:

1. Under differing fertilization and planting density conditions, both P and Ns vary significantly. However, no significant difference is observed for P's among the treatments when the Ns's have been corrected to the same level by

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 44-50]

means of the analysis of covariance. This result shows that the different treatments only alter mainly the Ns, and hence affect P. It is therefore important for increasing the yield of "Nanyou No 3" that the Ns's be controlled within a certain optimum range.

2. It has been found that the relationship between P and Ns may be expressed by

$$P = a + bNs$$

where a and b are parameters and $a > 0$, $b < 0$, that is, P decreases with Ns increasing. As the number of ripened grains (perfect brown rice) Nr, which is the difference between Ns and the sum of the number of non-fertilized and abortive grains, is a product of Ns and P, we have

$$Nr = PNs = aNs + bNs^2.$$

Consequently, the optimum number of spikelets per unit area (Ns. opt) can be obtained by

$$Ns. opt = \frac{-a}{2b}$$

on which the maximum Nr may be expected. These theoretical values of Ns. opt derived by experimental data are close to the actual number of total spikelets of high-yield paddy field.

3. The optimum component of Ns. opt, i.e., the optimum combination of the number of panicles per unit area and the total number of spikelets per panicle,

[Continuation of ZHONGGUO NONGYE KEXUE No 2, May 80 pp 44-50]

has been made. Although the theoretical calculation has been given, a further examination may still be required in large area production of rice.

WU Haidong [5459 1920 2767] guided this study; TANG Yugeng [3282 3768 1649] and ZOU Jiangshu [6760 3068 4258], both of Jiangsu Academy of Agricultural Sciences provided assistance and guidance; ZHANG Suying [1728 4790 5391] also took part.

AUTHOR: ZHENG Zerong [6774 3419 2837]
CHEN Yuxiang [7115 2417 4382]

ORG: Both of Shanghai Phytophysiology Institute, Chinese Academy of Sciences

TITLE: "Studies on the Relation between Reproductive Growth and Shedding of Buds and Bolls in Cotton Plant"

NOTE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 51-58

TEXT IN ENGLISH ABSTRACT: The shedding of buds and bolls is one of the important problems in cotton growing. In studying the physiological shedding of buds and bolls, we found that the shedding of reproductive organs of the cotton plant has its biological characteristics. In general, there is a correlation between the age of the reproductive organ and its shedding. Heavy boll shedding occurred at 4 to 5 days, and heavy bud shedding occurred at 10-20 days. These phenomena suggested that there is some relationship between reproductive growth and shedding of buds and bolls in cotton plants. In order to study this relationship, we engaged in a series of field experiments. The results showed that the ability to compete for the organic food between the reproductive organs of different ages is remarkably different. That is, boll > elder bud > flower > younger bud.

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TITLE: "Effect of the Increase of Production by Different Multiple Cropping and Crop Rotation Patterns of Double Cropping Rice Field in Winter and Its Influence on Soil Fertility"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 59-66

TEXT OF ENGLISH ABSTRACT: (1) The cultivation of Chinese trumpet creeper in the winter double cropping rice field may increase the soil fertility and provide more N, P, K nutrition for the growth of early rice, promoting its yield by 21.1 percent. But there was no effect on late rice production. With cultivation of early rice, the organic content of the soil decreased markedly. Although it may be increased after the late rice cultivation, the accumulation of organic matter is not significant for a whole year. (2) The cultivation of winter beans could give one more crop harvest and increase soil fertility. As the straw of the beans is used as green manure, the production of early rice can be increased by 14.4 percent. (3) The winter cultivation of rape not only provides an additional oil crop, it also good for soil fertility. (4) By the

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cultivation of wheat in winter, the yearly production of rice decreased 19.3 percent, the labor productivity decreased 44.2 percent (for cereals) and 82.5 percent (for cash). The content of organic matter and total nitrogen, and especially the content of quick effective nutrients, decreased markedly. Even if the total production can be raised by doubling the fertilization, the labor and fertilizer productivity would obviously be decreased, and the cost highly increased. If the total amount of fertilizers for two crops was divided among three crops, the yield loss of three crops (wheat-rice-rice) would outweigh the gain.

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ORG: All of the Institute of Pomology, Chinese Academy of Agricultural Sciences

TITLE: "The Inorganic Constituents and Nitrogen Contents of Delicious Apple Fruits in Relation to Occurrence of Watercore on Calcareous Soils"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 67-71

TEXT OF ENGLISH ABSTRACT: Peel and flesh samples of healthy, medium and severe watercored fruits of Delicious apples grown on calcareous soils were collected from two orchards located in high altitude regions of Tianshui in Gansu Province at harvest time in 1978. The analytical data of the inorganic constituents and nitrogen contents of the samples showed that even though the orchard soils were high in free calcium carbonate, the occurrence of watercore was also inversely related to calcium levels in peel and flesh of fruits. Increase in the ratios of fruit K/Ca, K+Mg/Ca, K/Mg+Ca and decrease in the percentage of fruit P, Zn and Mn might induce occurrence of watercore. No positive relationship was found between fruit nitrogen contents and N/Ca ratios with incidence of watercore.

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YIN Shangzhi [3009 1424 2535]
XI Wenying [1153 2429 5391]

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TITLE: "Using Reverse Indirect Hemagglutination Test in the Detection of Bacterial Leaf Blight Pathogen (Xanthomonas oryzae) of Rice"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 72-78

TEXT OF ENGLISH ABSTRACT: A reverse indirect hemagglutination test (RIHT) used in the detection of bacterial leaf blight pathogen in leaves and stubble of infected rice was sensitive, specific and rapid. The Xanthomonas oryzae may be differentiated from X. panici, X. oryxicola, Pseudomonas oryxicola and other bacterial contamination within two hours. The RIHT was superior to the bacterial stream observation under microscope and the reaction of bacteriophage

examination and was completely identical to the result of the inoculation of rice.

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ZHANG Heqin [1728 0735 3830]

ORG: All of the Institute for Application of Atomic Energy, Chinese Academy of Agricultural Sciences

TITLE: "Multiple Mating of Corn Borer (Ostrinia nubilalis Hubner) and the Application of Radio-Sterility Method"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 79-82

TEXT OF ENGLISH ABSTRACT: Most female corn borers (Ostrinia nubilalis Hubner) mate once in life, with only 7.3 percent of them mating twice. The males mate a maximum of eight times in their lives. The number of male borers mating twice is about half of that of those mating only once. The number of male borers mating three or four times is half that of borers mating two or three times. Very few males mate over five times.

Although the mating of each female with a male follows a certain order, the number of fertile eggs produced and the percentage of egg hatchability do not

follow a regular pattern. A normal female having consecutively mated with a normal male and an irradiated male produced eggs whose fertility or sterility depended on the sperm of the male of the second mating.

AUTHOR: LI Weige [2621 0251 2706]
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ORG: Both of the Analytical Laboratory of the Chinese Academy of Agricultural Sciences

TITLE: "A Method for Determining Rate of Dissipation and the Mobility of Trifluralin in Soil"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 83-89

TEXT OF ENGLISH ABSTRACT: A simple and rapid method was developed for the gas chromatographic determination of trifluralin residues in soil using an electron capture detector. There was no interference by other pesticides such as BHC. Recoveries of 89-106 percent are obtained from three soil types, treated at a level of 0.02 - 0.2 μ g. A simple method of purifying trifluralin for standard is also mentioned in this article. Twenty-four small plots of 24 x 24 cm were treated with trifluralin at a rate of 1.68 kg (a.i.)/ha. Samples were taken immediately at soil levels of 0-5 and 5-10 cm, and after 1, 2, 4 and 6 months for residual activity evaluation. By 1 month after application, 41 percent of the trifluralin applied was found in the 0-5 cm layer, 3-5 percent was found in the 5-10 cm layer. After 6 months, 23 percent was found in the 0-5 cm layer

but nothing was detected in the 5-10 cm layer.

An investigation was also made on sensitivity of trifluralin to light after incorporation into the soil, and the influence of water content on its dissipation.

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DONG and AN both of the Department of Animal Husbandry, Beijing Agricultural University; YANG of the Institute of Animal Husbandry, Jilin Provincial Academy of Agricultural Sciences

TITLE: "Recent Development of Animal Reproduction and Artificial Insemination in China"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 2, May 80 pp 90-96

TEXT OF ENGLISH ABSTRACT: ARTIFICIAL INSEMINATION (AI) AND FROZEN SEMEN

AI has been extensively used in horse breeding since 1950. In sheep, about 90 percent of ewes were artificially inseminated in nine sheep-raising provinces in the north, with pregnancy rates 50 percent to 85 percent. AI of dairy cattle started in the early 50's, and now about 80 percent of the cows are inseminated

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with frozen semen. In water buffalo, frozen semen was also used in 40,000 cows in 1978, with a pregnancy rate of 42.7 percent. In oxen, about 1,050,000 breeding cows were inseminated with frozen semen in 1978. Frozen semen has also been used in the AI of yaks. In pigs, about 4.2 percent of the breeding females (or 970,000 head) were in AI. Since 1974, studies have been made on the frozen semen of sheep, pigs, and horses, with the pregnancy rates of 39.4 percent in sheep, 40-58 percent in pigs and 62.5 percent in horses.

ESTRUS SYNCHRONIZATION

Results of experiments on cattle estrus synchronization showed that about 80 percent of treated animals simultaneously came into estrus 2-4 days after (1) subcutaneous implantation of 20-30 mg of progesterone for 10-12 days, (2) oral administration of Megestrol (MA) 7-20 mg per day for 10-16 days, (3) a single intracervical infusion of 12 mg of 15-methyl PGF_{1α}, or 13-dehydro-ethyl PGF or PGF methyl ester. In most cases, conception rates after synchronized estrus were 30 to 40 percent.

EMBRYO TRANSFER

Embryo transfer in sheep started in 1973. FSH, LH (or LRH) or PMS were used to induce superovulation in sheep. Results from 211 ewes of five breeds showed

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that the average number of ovulations and embryos recovered per ewe were 10-18.9 and 7.7-14.4 respectively. The ova fertilized were 83.2 percent to 93.1 percent. The lambing rates from embryo transfer were 58.6 percent to 72.1 percent. One of the donors produced 20 embryos and 10 lambs were obtained from 18 recipients.

The first calf from embryo transfer was born in August, 1978. The pregnancy rate of the embryo transfer in cattle was 25 percent (16/64).

* The following assisted in the present study: HUANG Linqi [7806 2651 4388], WU Shijian [0702 4258 1017], ZHU Yuding [2612 5940 7844], CHEN Youchen [7115 1635 5256], TU Youren [1205 0645 0088], HAN Baoshu [7281 1405 2579], XU Chenggou [6079 2052 2845], DAI Yaying [2071 0068 5391] and XIONG Hanlin [3574 3352 2651].

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